JAN 14 1933

THE SIGHT-SAVING REVIEW

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December, 1932

"Let There Be Sight"

Volume II
Number 4

PUBLISHED QUARTERLY BY
THE NATIONAL SOCIETY FOR THE
PREVENTION OF BLINDNESS, INC.

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Price $3.00 a year; single copies 75 cents

Published quarterly by the National Society for the Prevention of Blindness, Inc., Office of Publication, 1315 Cherry Street, Philadelphia, Penna.; Editorial Office, 450 Seventh Avenue, New York, N. Y.

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Application pending entry as second-class matter at Philadelphia, Pa., Postoffice.

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Will History Repeat Itself?

Shirley W. Wynne, M.D., Dr. P. H.

WHAT New York City has done in the past 30 years to prevent eye diseases among children is related here. The economic depression threatens, however, to undo much of the good accomplished—for widespread malnutrition endangers the children's eyesight

THIRTY years ago the Department of Health began its work among the school children of New York City to check the prevalence of infectious eye diseases, especially trachoma. A hospital and a dispensary had to be established by the Department to take care of the tremendous number of children needing free treatment because, at that time, facilities for giving free treatment to the general public were taxed to the limit in both public and private hospitals.

Today we have reached the point where infectious eye diseases have been so reduced that free treatment of school children by the Department of Health is not needed or advisable. All children needing such services can be cared for by non-department free clinics.

Just how has this change come about?

Perhaps the history of a community can be written in terms of the health of children's eyes. At least, in New York City something like this can be done for the last thirty years.

In 1902, when the first Department of Health eye clinics were organized, we had a large immigrant population. Whether or not trachoma was imported from Europe by some of these people, the fact remains that it had ample opportunity to spread among families huddled in crowded tenement dwellings with few facilities for individual life and cleanliness.

To this is added a fact of significance in the light of our present knowledge of nutrition and its relation to eye health. Here were people from nearly every country of Europe, but especially from the rural sections of Eastern Europe. Transplanted from their native environment, many of them were deprived of some of the foods that had been a normal part of their dietary for generations. Working for low wages, their tendency was to cling to the cheapest foods that they were used to, and to supplement them with the cheapest foods available here. Without experience with the foods which should make up their diet, they often left out the foods which experience has shown are essential to the best nutrition.

All of these conditions were reflected in the trachoma situation in the schools. One of the oculists in the first Department of Health clinic remarked just the other day, "In one school of 4,000 pupils, there were 800 cases of trachoma. You cannot find that many cases in the entire city today." Among the children using the public baths, 12 per cent were found to have trachoma and were excluded from the use of the baths to prevent the spread of the disease through these channels.

During the first years of this work, a very careful technique for the treatment of trachoma was built up. Sulphate of copper was found to be the most reliable application for medical treatment. As for the surgical treatment of trachoma, among the 20,000 operations done in the Department of Health Trachoma Hospital, only one eye was lost, and that was traced to a streptococcus infection due to insanitary home care.

Other eye infections were treated with success, both at the dispensary and at the hospital. This experience led to the Department's action in regard to ophthalmia neonatorum, infection of the eyes of the newborn. In 1905, instructions went out to all midwives on the use of Credé's solution of silver nitrate in the eyes of all newborn infants, and, further, midwives were required to report all cases of "sore eyes" to the Department of Health, so that a medical inspector could give immediate treatment.

Some time before this, in 1903, tests were made of vision among pupils in the vacation schools and it was found that 30 per cent of these children did not have perfect vision in one or both eyes. The oculists who made this study stated that ". . . by the early

detection of cases of hypermetropia, the number of cases of myopia, produced by straining of the accommodation, will ultimately be diminished in this city." So was born another branch of the sight conservation work of the Department of Health—the prescribing of glasses for school children needing them but unable to go to a private oculist.

In 1908, when the Bureau of Child Hygiene was established, the pioneer work of the preceding years became crystallized in a city-wide plan, with eye clinics at convenient places to care for the school population. The first full annual report of that Bureau—for the year 1909—recorded 45,615 cases of trachoma and 49,807 cases of conjunctivitis treated. The next year showed the number of cases of both these diseases to have been reduced to about half that number. In 1911, there were but 15,000 cases of trachoma treated in the Bureau's eye clinics—one-third the number treated in 1909—and about 26,000 cases of conjunctivitis.

The reduction of trachoma cases continued steadily until, in 1928, there were but twenty cases treated in Department of Health eye clinics. The situation had changed also in regard to other eye infections. The vigilance of school nurses and teachers made it possible to get a case cared for before there was need of intensive treatment.

In the meantime, the work of the eye clinics had developed phenomenally along the lines of prescribing glasses for school children whose parents could not afford to send them to an oculist. Clearly the time had arrived to change the Department's policy regarding its eye clinics. This change was required both by the conditions with which we were dealing and by the demands of economy. In May, 1931, our eye clinics ceased to give medical or surgical treatment and were given over entirely to the correction of defective vision. All the medical and surgical treatment of eye diseases could be handled by private oculists or, when the children came from poor families, by established eye clinics in hospitals.

How small a part of the work of the Department's eye clinics the medical and surgical treatment of eye diseases had become, is revealed by these figures. In 1930, about 20,000 children attended the clinics both for this type of treatment and for refractions. In

1932, the first eleven months, 18,129 children attended the clinics for refractions only. Admitting that due to depression conditions there has been a slight increase among the children coming to the free clinics for prescriptions for glasses, still it can be seen that the work has been preponderantly along these lines.

This tendency is also reflected in the history of the work for the blind and for those with poor vision in the public schools of the city. From 1909 to 1913, these special classes, eighteen in number, were organized for the blind, although a few partially sighted children were included. Ophthalmia neonatorum was the leading cause of the blindness among these school children; trachoma also played an important rôle among the causes of blindness. After 1913, the intensified campaigns against these two diseases were reflected in the diminished numbers in the classes for the blind. Today, there are but 82 students enrolled in the public school classes for the blind, while the two classes for sight conservation started in 1914 have expanded to 89 classes with 1,680 students enrolled. Myopia, hyperopia and astigmatism lead as causes for such poor vision that a child must be taught in one of these classes. In other words, in viewing the chief causes for inclusion in special classes, we find that the emphasis has shifted from eye disease to errors of refraction.

By controlling certain formerly widespread infectious diseases, other eye conditions have been revealed in their truly serious light. It reminds one of that old fairy story in which a peasant made a magic wish that he should be relieved of his toothache, only to find that he was more acutely conscious of his aching feet.

So far I have dealt with the trend of the last thirty years. But these years of depression may change this trend. Some authorities on diseases of the eyes view with alarm the possible consequences of malnutrition and poorer living conditions among those affected by unemployment. Will there be a return to the conditions of 1902?

We have just compiled the statistics regarding the medical examinations of school children during the first three quarters of 1932, and find that the proportion of children suffering from malnutrition has continued to increase. During the years 1927, 1928 and 1929 the percentage of such children was quite stable, averaging

13.5. In 1930 the figures for the city as a whole rose to 16.1 per cent; in 1931 the rate rose to 17.0 per cent and for the first nine months of 1932 it has increased still further to 17.7 per cent.

There is no doubt that the increase in the prevalence of malnutrition in school children is the result of the severe economic depression. The analysis of the figures indicates that remedial measures should be concentrated on the boroughs of Manhattan and the Bronx. Unless a marked improvement can soon be brought about we shall pay the penalty in increased sickness and deaths among our younger generation. The situation calls for liberal support of all the welfare agencies now dealing with relief for the victims of the depression.

With this in mind, the Department of Health has made every effort during the past year to spread education on the fundamentals of an economy diet. Our nurses in the schools and clinics have received special instructions regarding nutrition and have made great progress in teaching the people with whom they come in contact how to get the food elements they need even though their food must be cheap.

This, combined with a more widespread knowledge of personal hygiene than the general population had in the early years of the century, builds a more substantial foundation for general health and for the health of the eyes than we had thirty years ago. In addition, we have the rigorous routine of school medical inspection to guard against outbreaks of eye disease; we have the work of well-trained midwives in preventing "sore eyes" among the babies whose births they attend; we have eye clinics to take care of children whose vision needs correction and who must get these services without charge—all new and developed within the first three decades of the century and all aimed at preventing history from repeating itself.

Vision Testing for the Young Child

Mary Emma Smith, R.N., and C. Edith Kerby

A recent survey reveals that one out of every 25 preschool children in the country has a vision test as a part of the physical examination, and that vision testing of this age group has been started in 46 states

"THE 'E' game is a great help in discovering vision defects before children start to school."

"We found that one child whom we had considered a mental case had less than 20/200 vision."

"We began this work as an experiment and found so many visual defects that we realized its importance."

"I regard it as a *sine qua non* in the examination of preschool and first-grade children."

Statements such as these suggest the importance that is attached to vision testing for young children by leaders in the field of health supervision. They are typical of some of the comments made by persons who replied to our questionnaire on the subject of vision testing for the young child. This questionnaire, which was sent out by the National Society for the Prevention of Blindness, was addressed to organizations doing health supervision of young children throughout the country in an attempt to discover to what extent local communities have incorporated vision testing into their programs.

It is to be generally understood that vision testing, as herein discussed, is considered a screening process whereby children seeming to have visual defects are selected for a careful examination by an eye physician.

The mailing list of organizations consisted largely, but not entirely, of official health and education departments. The original list was furnished by the National Organization for Public Health

Nursing, this being supplemented by a list of similar organizations located in communities in which demonstrations of vision testing for small children had been given by members of the staff of the National Society for the Prevention of Blindness. A total of 3,105 questionnaires was mailed and 1,720, or 55 per cent, were returned. When one considers that there was no follow-up correspondence to bring in the schedules and that the Society has no official connection with the local organizations addressed, the percentage of returns is very good and undoubtedly indicates a real interest in this subject on the part of workers in these organizations. The Society appreciates the interest and co-operation shown by those who have made this study possible.

The findings of the present report are, to be sure, somewhat incomplete. However, it is felt that a large proportion of the organizations failing to reply did so because they were not carrying on any work in this field. Summary figures in the following analysis include only organizations and counties actually reporting; no attempt has been made to estimate the extent of the practices in places from which reports are missing or incomplete.

Counties Doing Testing

A check-up of returns by counties shows that vision testing of the child too young to know his letters has been incorporated into health supervision programs of one or more organizations in one out of four counties in the United States. Of the total 3,099 counties* in the entire country, 443, or 14.3 per cent, start vision testing with the preschool age; and 333, or 10.8 per cent, start with children in the first grade. The list of counties in which some testing of preschool children is being done includes counties from every state except Utah and Nevada.

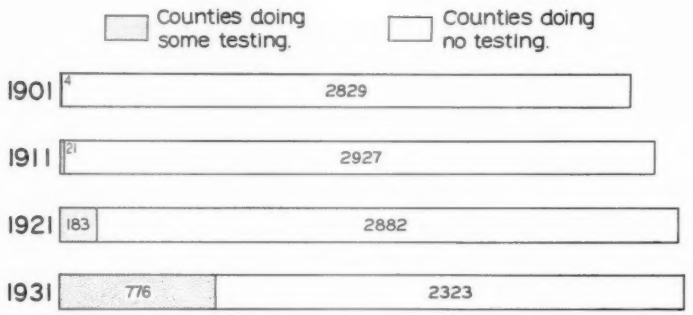
When Vision Testing of Young Child Began

As in the case of most preventive health work, the entire development has occurred since the opening of the present century, most of it within a comparatively few years. If the dates on the returned schedules are accurate, there were only four counties

* Following the policy of the Bureau of the Census, we are including as counties those cities and other population units having the status of counties.

doing vision testing of the young child in 1901; by 1911 there were 21; in 1921, 183; and in 1931, 776. During the period between 1925, when the National Society for the Prevention of Blindness first became interested in the development of this program, and 1931, the number of counties making vision tests has more than doubled.

Growth in the Number of Counties Doing Vision Testing of the Young Child



Approximate Proportion of Children Reached

In the above figures showing the proportion of counties doing vision testing, the picture is over-optimistic, since, as stated, a county is credited as having made a start if only one organization is doing some testing. When allowance is made for the proportion of children actually tested, the figures are much less favorable. For example, we find that comparatively few communities are reaching as many as half of the available preschool (four- and five-year-old) children. In 14 states not a single county is reaching 10 per cent of this age group. Communities in which some testing is done may constitute only a small portion of the population of the county, and the population of counties doing some testing is a comparatively small part of the entire state in most instances. The net result is that the proportion of preschool children in the entire country having a vision test in 1931 is estimated at less than

four per cent. Even the most active states are not reaching more than 10 per cent, as will be seen in the chart showing the ranking of the states.

It is evident from the questionnaires that the proportion of first-grade children reached is very much higher, although the fact that actual figures for the number of school children tested could not be given by grades in many instances makes an estimate of this total unreliable.

Reason for Starting Preschool Eye Testing

The National Society for the Prevention of Blindness, which had for some time felt that if attention could be given to detection of eye defects in children of preschool age the eye faults found at school age might be decreased, began in 1925 to put its theories to a test. At that time an arrangement was made with leading ophthalmologists in New York City to make eye examinations of groups of kindergarten children at the time of their health examinations. The plan had a twofold purpose: first, to give health service of a type that had hitherto been overlooked; and second, to obtain statistical data which would indicate the extent of the need for such eye examinations.

In this experimental stage, the services of the ophthalmologists were given free; during the course of the study it became evident that if any considerable number of children were to be reached, it would be necessary to evolve a plan, similar to that used in school eye inspection, for screening out or selecting the children who seem to be in need of the attention of an ophthalmologist. This, in turn, led to the employment of an experienced public health nurse to work out an improved technique of vision testing particularly adapted to the needs of the little child. One of the by-products of the project was the selection of the Snellen test card using the symbol "E" in various positions, as the one chart, among all the so-called illiterate charts tried out, which was suitable for the purpose. Finding that none of the Snellen "E" charts available for sale quite met the standards of accurate measurement or the requirements as to spacing, surface texture, etc., the National Society for the Prevention of Blindness later produced its own vision testing charts, using the scheme of measurement originated by Hermann

Snellen, the Dutch ophthalmologist. The demonstration program in New York City furnished adequate proof that vision defects exist among the preschool age group in proportions about equal to those occurring among school children.

By the beginning of 1927, the Society's educational program for teaching the importance of vision testing for young children, as well as the technique of testing, was well under way. The present inquiry into current local practices and procedures in the matter of vision testing is, in a sense, an inventory to discover how well we have succeeded in what we started out to do. In this connection it is interesting to note that of the 1,237 organizations replying to this question on our schedule, 620, or 50.1 per cent, had seen a demonstration of the method of vision testing recommended by the National Society for the Prevention of Blindness. Out of the same total, 25 per cent state that the demonstration was a determining factor in the starting of their programs of vision testing for the young child and an additional five per cent were influenced indirectly either by the reading of our literature on the subject or the stimulation aroused in summer round-up campaigns of the National Congress of Parents and Teachers (which now includes visual acuity items on its medical examination form). Several others (amounting to four per cent) report that their techniques were improved after seeing such a demonstration.*

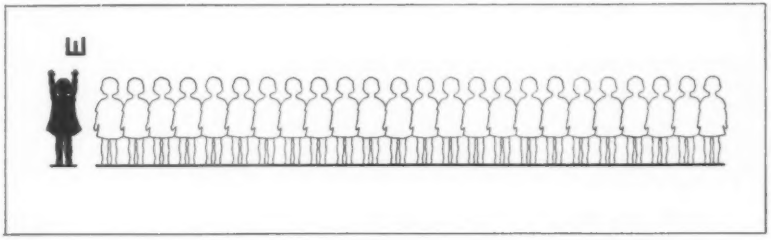
It is very interesting to note that almost 70 per cent of the organizations give as their reason for starting vision testing of young children a requirement or recommendation of their health or education authorities. This tendency is to be highly commended. However, we are inclined to doubt that the practice is as widespread as the figures would indicate. We are skeptical because, having found a tendency on the part of several organizations which are doing no testing whatever among preschool, kindergarten, or first-grade children, to reply to our question in this way, we feel that many may have had in mind vision testing in general and not

* It should be noted that demonstrations of the recommended method are now being given by several state organizations having prevention of blindness programs. According to files in this office the list includes: The Illinois Society for the Prevention of Blindness, the Maryland Society for the Prevention of Blindness, the Children's Fund of Michigan, the Missouri State Commission for the Blind, the New Jersey State Department of Public Instruction, the New York State Commission for the Blind, and the Pennsylvania State Council for the Blind.

just the testing of young children, as was specified in the question. Moreover, it seems logical to suppose that if work with the younger age groups were really required, a larger percentage of the children would be reached.

Of interest also is the proportion (7.9 per cent) of organizations reporting that they had been forced to start vision testing of the younger children on their own initiative because of the evidence that they saw of its need.

ONE OUT OF 25 Preschool Children Had a Vision Test in 1931



Type of Chart Used

It is perhaps not surprising that eye test charts using the letter "E" are the ones most commonly used for vision tests in the younger age groups. As mentioned above, this is the type of chart around which the vision testing method recommended by the National Society for the Prevention of Blindness is developed. The Society's symbol "E" chart has had an average sale of over 2,000 per year, which probably accounts for the fact that 66.1 per cent of the reporting organizations are using it. In addition, 26.9 per cent are using other "E" charts, 18.2 per cent are using charts containing pictures of objects, and 1.9 per cent are using a "broken circle" chart, either entirely or interchangeably with the Society's "E" chart. Comments on the comparative usefulness of the various types of charts were frequently expressed in the questionnaires.

A decided preference for the "E" chart seems to be general, although one organization feels that a satisfactory method has been

developed, using a broken circle chart. Another organization reports that very young children find the "E" chart harder to understand than a picture chart. One worker specifically mentions, what we have already noted in our office, that the accuracy of picture charts is questionable because of the variety of proportions in the pictures. Frequent mention is made of the fact that even children below par mentally can have vision tests with the "E" chart, because the four directions in which the "E" may point are more easily learned than the names of objects. In many places, also, the "E" chart is being used for all age groups to overcome the tendency of older children to memorize the sequence of the letters.

Specific mention is also made of the satisfaction felt by the workers in their ability to discover evidences of eye defects at an earlier age with the recommended method. The idea of making a game of the testing and having the children point with their hands or arms has apparently met with approval.

Lighting of Chart

One of the important features of the Society's method has been the stress laid upon having the test chart adequately lighted. We have strongly recommended the use of specially adapted artificial lighting for this purpose wherever available, since only by its use is it possible to assure, at all times and places, lighting which will be adequate, free from glare, and of equal intensity. It is somewhat of a disappointment, therefore, to find 67.4 per cent of the organizations reporting the use of daylight only, as against 14.8 per cent using artificial light, and 17.8 per cent using either daylight or artificial light.

Of course, we realize that for work in rural schools it is difficult to provide artificial light. Unfortunately, these schools are also likely to be the very ones in which it is impossible to arrange for good placement of the chart in adequate daylight. Even in city schools provided with electricity there seems to be a tendency to resort to artificial light only when daylight seems inadequate. It is well to remind those responsible for testing that, just as in any other test, it is important to have the conditions under which the test is done completely under control in order to be certain

that variations in visual acuity findings have a real significance. There is abundant evidence that school boards generally have not appreciated this need and so have been slow to provide suitable equipment for vision testing. Adequate equipment for vision testing would seem to be quite as important as scales for weighing, first aid kits, facilities for hand-washing, etc., all of which are now considered essentials in good health work.

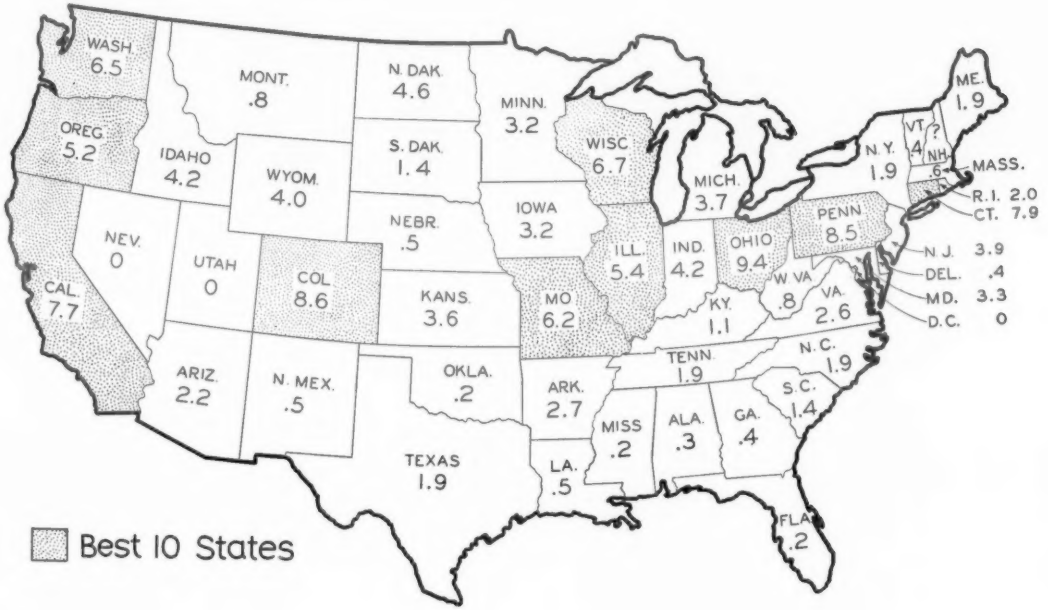
Responsibility for Vision Testing

It may be that the figures on the person doing the vision testing are biased in favor of the nurses because of the fact that our mailing list consisted chiefly of organizations using public health nurses, but we are inclined to believe that the relative proportions are typical of the distribution of this function among physicians, nurses, teachers, and others throughout the country. The data show that in 86.7 per cent of the organizations the nurse has either the full responsibility (59.8 per cent), or shares it with physicians (15.5 per cent), or with teachers (9 per cent) or with both (2.4 per cent). Physicians alone do the work in 8.4 per cent of the organizations, teachers alone in 4.2 per cent, while physicians and teachers work together in 0.5 per cent. Practically none (0.2 per cent) is done by volunteers.

About 12 per cent of the organizations reporting called upon us for further information and help in the solution of their local problems—a service which the National Society for the Prevention of Blindness is always glad to give. A number of these requests seem to suggest that a lack of confidence in their own work exists among persons doing the testing. It is evident, therefore, that more emphasis may well be placed upon the teaching of the techniques of vision testing so that public health nurses, teachers, and others may have an opportunity to acquire the necessary skill in testing as well as the assurance which comes with a knowledge of the how, why, and wherefore of the work they are undertaking.

It was particularly gratifying to us to find among the group of workers who had apparently not heard of the method of giving vision tests to children too young to know their letters a desire to learn more about it so that the children in their charge might be given the benefit of this preventive service.

Approximate Percentage of Preschool Children Given Vision Test in 1931



Comments and Suggestions

Comments were made by a little over 10 per cent of the organizations, nine per cent expressing satisfaction with the technique as recommended by the National Society for the Prevention of Blindness, or with some specific feature of it, while the remainder indicated some criticism. In many cases very definite reasons were given for the reactions mentioned. Some of the comments relating to the test charts and methods have already been given.

Perhaps the complaints most frequently voiced were that the tests are too time-consuming or that the results are not very accurate. In the words of one nurse, "It takes up too much time, and a busy nurse gets impatient." The crux of the situation seems to lie in the attitude of the person making the test. If the nurse is convinced of the value of the test, she will bring to the job her undivided attention and interest and will probably find, as many have reported, that "an unhurried and happy atmosphere is essential to a good job and that the results are well worth the time spent."

As to the accuracy of the results of the test, our own experience, which is reinforced by the reported testimony of many who commented on this point, has shown that the child's part in the test is well within the comprehension of small children and those of slow mentality.

Where the worker has reason to doubt the findings, it may be that the conditions of the test have not been controlled or that too much is expected of it. In the latter connection it is well to remember that the test is for visual acuity only. The findings will indicate how accurately a child can see, but neither the amount of latent eye defect which he may have, nor the discomfort involved in the effort to overcome this defect, are necessarily revealed *in the results of the test alone*. For this reason, it is felt that the reminder of a nurse in the state of Washington that "we stress the teacher's observation as to how the child uses his eyes" is most timely.

As has been stated before, only a complete examination by an eye physician will reveal the true condition, but, by a careful vision test and the observation of symptoms of eyestrain, public health nurses, teachers and other trained, non-medical workers can

screen out many children for eye examination who otherwise might go without this service.

Suggestions on various points in the technique or equipment are almost too numerous to be covered in an article of this length. However, we feel that the following are worth passing on:

Test cards may be cut up and one letter of each size mounted on a separate card that can be turned in any direction.

An "E" test card issued by one state gives instructions in testing on the back of the card.

For eye cover cards the use of attractive blotters, leaflets, etc., containing a health message which can be given to the children at the completion of the test serves as an incentive to co-operation.

A combination tongue depressor and eye cover which looks like a flat spoon may be used.

A strong flashlight, if properly held, may be used to illuminate the chart if no electric lights are available.

The cover card for exposing one letter at a time is less likely to soil the chart if one side is white.

Homemade chart holders adjustable to any child's height have been devised by various persons.

A child may be put at ease and much time saved for the tester if one or two other children are tested in the presence of the little one, especially if the others are older.

When new school buildings are planned a special room with proper lighting facilities should be provided for use in all physical examinations.

Conclusions

Reports received from organizations throughout the country indicate that there is a growing appreciation of the importance of giving attention to the eyes of young children. About one out of four counties in the United States has already started to meet the need for such service by incorporating into its health supervision program some vision testing of preschool and first-grade children. However, the need is by no means adequately met even in these counties. It is estimated that only four per cent of the preschool population of ages four and five years were reached during 1931.

The eye test chart and techniques developed by the National Society for the Prevention of Blindness for doing the testing have met with the approval of the medical profession and a large number of organizations which have tried them out, but there is evidence that the work could be made more satisfactory if each person charged with this important part of the health examination were given an opportunity to acquire the techniques and skills involved.

Satisfactory equipment for good work in vision testing is not generally available. In particular, provisions for lighting of the test charts are lacking. A satisfactory method of illuminating charts in rooms having no electric lights has yet to be evolved.

Whether the amount of vision testing of young children being done is affected by the fact that our check-up was made during depression times it is difficult to tell. It seems only reasonable to suppose that necessary economies in expenditures, personnel, and time, have delayed the expansion of this comparatively new program. However, the Society is glad to know that in spreading knowledge concerning this very essential part of a complete health examination, it has the enthusiastic support of many who have tried it. As one nurse put it, "Your eye test is the best I have seen. I am trying to get all nurses in the district to use it."

Editorial Note

The Society will continue the policy of supplying to communities, through official and voluntary organizations for health and education, the service of staff members to assist in teaching the technique of vision testing and in planning and setting up community programs of sight conservation.

A set of pamphlets* dealing with eye care of young children will be sent upon receipt of twenty-five cents to cover forwarding charges. The list includes:

49. Testing the Vision of Preschool Children
D.50. Vision Testing and Eye Inspection—An Essential Part of the Preschool Health Examination
76. The Eyes in Childhood

*The National Society for the Prevention of Blindness, Inc., 450 Seventh Avenue, New York, N. Y.

96. Eye Accidents in Child Play
98. Eye Injuries and Sympathetic Ophthalmia
100. Preventing Ophthalmia Neonatorum in Virginia—An Administrative Problem
101. Facts and Fallacies Concerning Squint (Cross-Eye)
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The Eye Physician In Industry

J. Guy Jones, M.D.

THE industrial eye physician has a threefold responsibility—to the injured workman, to the employer and to the insurance company

THE principal demands made of an industrial worker in any trade are qualifications and the physical ability for sustained effort. We are here concerned only with the visual capacity of the individual as it affects his ability to carry on. By the "industrial worker" we mean any person or group of persons engaged in the pursuit of a useful or gainful occupation. "Oculist" is a term applied to a physician who, by special training and experience, has equipped himself intelligently to treat diseases and injuries of the eye. A better term would be "eye physician." More favorable results in the treatment of eye injuries are expected and demanded than formerly because of better understanding by the laity and increased knowledge among doctors.

Economics of Eye Injuries

In recent months not only the individual but the municipal, state, and national governments have had a vivid, tragic, and lasting experience of the expensive calamity of universal unemployment. When this occurs in a single family through the loss of the productive ability of the wage earner due to disease or injury of an eye, apparently only the immediate dependents are concerned.

Among the costs of eye injuries to labor are the limitation of employment, lessened ability to perform duties, and loss of time and earnings by the injured and other members of his family who must act as attendants. There is a waiting time, varying from three days to two weeks, in which the injured is furnished full

medical and surgical care, but for which no compensation is paid unless the disability lasts twenty-eight days or more—then the company "picks up" and pays for this time. The expense to industry includes the loss of the services of a skillful worker, temporarily at least, and the waste of time incidental to the accident in slowing down of production. Injuries require the shifting of employees, investigation of the accident, and attention to the injured. This necessitates the services of one or more fellow employees for a considerable time. In addition to this, there is a lowered morale among the workmen, with a decrease in efficiency and an increase in the insurance charges.

The insurance companies expect a certain number of injuries of each type and adjust their premiums in accordance. An excessive number of accidental or unjust claims is an unanticipated burden. In a recent article by the author* it was found that the average cost of investigating an accident case was $6.79, while the average medical expense, including hospital, X-ray, etc., was $21.88. In Texas, during 1931, there were 60,000 accidents, meaning that one person in 88.3 suffered an accident of some nature; approximately 10 per cent of these accidents, happening to one person in 795, were injuries to the eye requiring surgical attention. The great majority were due to a simple foreign body of the cornea requiring only first aid treatment and allowing the patient to return to work. To meet investigation costs and medical expenses, together with compensation, overhead, and dividends to stockholders, the insurance company receives from forty cents to $12 per $100 salary paid to insured employees, depending upon the risk incurred. Since this is paid by the employer, he must adjust his charges for the finished product, or reduce the expense of production, and labor is taxed accordingly.

Degrees of Visual Loss

Our definition of blindness is the inability to see light and objects with or without glasses. Patients are considered industrially blind before they reach this point. Industrial blindness varies with the character of the employment and its visual requirements, the most

* The Industrial Ophthalmological and Compensation Problem, J. Guy Jones, M.D., *Texas State Journal of Medicine*, **28**: 231–237 (July) 1932.

rigid being in the aviation, the railroad, and the army and navy signal services, where normal or better than normal visual acuity is required with a full visual field and no muscular defects. An applicant for these positions may be industrially blind with a vision of 20/40, while a worker in the oil fields, or a teamster, may have sufficient vision for all practical purposes when he has a 50 per cent loss. We ordinarily consider that a visual capacity of 20/40 is no handicap, and a vision of 20/200 as industrial blindness. However, many people with no better visual acuity are earning sufficient means to support themselves and their families, and other individuals are driving on our highways, under the safe guidance of the Almighty, with little better ability to see.

Injury to one eye affects the workman by restriction of his visual field; that is, the breadth of area which may be seen when the eyes are directed in one position. He loses the full effect of the third dimension, or stereoscopic vision. This may be tried by anyone if he will make a small dot with a pencil, then close one eye and attempt quickly to bring the pencil point back to the dot, or close one eye and try to thread a needle. This is no handicap to those who in early life have been deprived of the use of one eye, but the skilled mechanic requires months to adapt himself to changed conditions. The common expression, "the strength has gone into the good eye," is founded upon this fact.

It may be interesting to note that in the article referred to above, of the claimants examined for compensation, 28 per cent had a vision of 20/40, or better, in each eye; 42 per cent had no compensative injuries; and 44 per cent were industrially blind. Corneal opacities resulted in impairment of vision in 33 per cent of the cases; and 3.3 per cent had high refractive errors and one eye of little benefit from disuse, or the lack of development which we term amblyopia ex anopsia.

When there is loss of vision as a result of traumatic cataract, even though perfect sight is obtained in the eye with the addition of glasses, double vision and blurring usually result; when this is persistent, the eye is of little benefit. Considerable embarrassment may be avoided if this is explained to the patient before the operation. Recognizing this, some states consider the loss of the lens, or aphakia, equivalent to the loss of an eye. In others, and

medically, the vision is computed and compensation paid according to the best visual acuity obtainable with a glass of not over four diopters' difference between the two eyes.

What Is Adequate Compensation?

Practically all of our states, Canada, and a large percentage of the foreign governments have enacted some form of workmen's compensation law. There is a fair uniformity in the implications and benefits to be derived. In countries with a lower type of living and family demands, as compared with ours, the payments seem meager. Among the states of the Union, there is a wide margin of difference in the benefits. In the majority of states, for the loss of one eye a certain percentage of the average earning power is paid for one hundred weeks, in some as low as fifty weeks, while blindness in both eyes is considered total permanent disability and the payment varies from $1,000 to $15,000, or for about 401 weeks. This wide discrepancy is probably due to legislative influence by outside interests. It seems inconsistent for the legal profession to criticize doctors for differences in findings and opinions when they, as interpreters of legislative rulings, accept laws of such variance.

Common Types of Eye Injury

In considering the causes of visual loss, corneal opacities, resulting from chemical, mechanical, or ulcerative changes, are by far the most frequent during that part of life of the greatest activity, and in the aged are probably responsible for about eight per cent of the blindness. Corneal opacities interfere with vision by diffusion of light, actual obstruction of the rays, or a severe irregular astigmatism. The size and position of the opacity determine the loss, while the depth of the scar and age of the patient will determine its permanency. The opacity may be slightly influenced by treatment, and in the course of time one is surprised at the rate and extent that clearing has occurred.

Corneal opacities are, to a great extent, preventable, in that they are usually a result of delayed or improper removal and after-treatment of the simple foreign body in the cornea. This delay may be no fault of the patient; the foreign bodies are often received

and no significance attached to the discomfort until several hours later, when the corneal irritation, or beginning ulceration, forces him to seek advice. Too often, however, clumsy attempts at removal by fellow workmen, or unskillful treatment by physicians without proper facilities, produces large abrasions of the cornea; and the failure to apply proper after-treatment results in ulcerations with subsequent scar formation.

Direct blows from blunt objects with even light or moderate force often result in severe destructive changes to the eye. The globe is filled with fluid and semi-fluid content, and, being incompressible, there is a sudden increase in force, which is transmitted to the other tissues of the eye, resulting in tears or ruptures of one or more of its inner coats and, if severe enough, of the sclera itself. There may be dislocation of the lens and other lacerations of the vital structures. In each case a large amount of blood escapes into the eye, leaving residual changes which markedly affect the usefulness of the eye. After these injuries the vision may be suddenly lost, and, if the trouble is due only to extravasated blood or swelling, the eye may recover its usefulness; on the other hand, minute tears or hemorrhages may escape notice until weeks or months after the injury. With destruction of the retinal elements sight fails.

Perforating wounds are usually due, in the bottling and engineering industries, to flying glass and broken water gauges, and have become quite common among truck drivers. This type of injury should become less frequent with the introduction of shatter-proof glass. When these wounds involve the cornea only much may often be done with skillful surgery. All injuries involving the lids and eyeball should be treated only by an eye surgeon. I have under treatment at present a young man who, while driving a truck in west Texas, suffered a serious accident in which the upper lid was cut from the brow to the margin. The wound was sutured entirely without either patient or physician knowing that the eyeball had been incised over the entire cornea and part of the sclera. This condition was not recognized until one week later when he came into our office for removal of the stitches in his upper lid.

Due to rigid inspection of workmen's tools, introduction of

more labor-saving methods in manufacturing, and the wearing of goggles by the workmen, together with other protective devices, intraocular foreign bodies have become less frequent. They are still too common, however, and it is seldom that an eye regains useful vision after such an injury. Many cases are reported as recovering normal vision after successful magnet extraction of the object, but in after years most of these eyes suffer other changes,

Courtesy of The Pullman Company

The flying splinter cracked but did not penetrate the protecting goggles.

either as a result of entrance or exit of the foreign body, or, as is possible in all eye injuries, because of infection and sequelae.

In all severe head injuries with the possibility of fracture, the attending physician is derelict in his duty if he fails to obtain the services of an eye physician as soon as circumstances will permit. The oculist may be of some assistance in the management of the case by his familiarity with the eye findings. Also by early examination he may prevent unjust claims for injuries and loss of vision from unrelated causes.

The introduction of calcium products into the eye, most commonly lime or carbide, results in opaque deposits, which are extremely difficult to remove and have serious results. Caustic alkalies are most destructive, and acid burns from battery explosions are frequent. Workers often suffer from the effects of exposure to light and heat, and they accuse smoke, chemical fumes, and petroleum gases of causing various ocular conditions. We have seen patients blind, they claim, because they got salt and flour into the eye, and some war veterans still complain of the effects of gas upon the eyes when they attempt to work.

The Oculist in Industrial Ophthalmology

The oculist's services are manifold. In industrial surgery he must be more than doctor. His first duty is that of eye physician, rendering prompt, skillful, and attentive treatment so that the injured may return to work as early as possible, with the eye as nearly normal as possible. He is also agent for the employer or insurance company and should guard against unjust and excessive claims. His services extend beyond the treatment of the actual injury, as there is a mental and emotional side which must be taken into consideration. Failure of the physician to secure confidence and co-operation through lack of tact or discretion results in a suspicion that the insurance company is penurious and negligent in the settlement of claims. Some doctors expect and render excessive charges for their services when the insurance company is paymaster; and when they enter court to testify under oath they produce carelessly and poorly compiled notes that are of little benefit either to patient or to defendant. Statements and prognoses to both parties should be guarded, definite, and accurate, so that they may be defended on cross-examination.

Save Your Eyes

Professor F. de Lapersonne

The American National Society for the Prevention of Blindness is proud to have played an important part in the establishment, three years ago, of the International Association for Prevention of Blindness, which maintains its secretariat in Paris, France. Despite the difficulties experienced during this period of world-wide economic depression, the International Association has gone forward with its program of stimulating the organization of national committees for the prevention of blindness.

The third annual meeting of the Association, held in Paris on November 19, was devoted to a discussion of sight-saving classes; one of the principal speakers was Mrs. Winifred Hathaway, associate director of the American National Society. In connection with the meeting, the International Association co-operated with the French Committee for the Prevention of Blindness in an intensive public education campaign which included a series of six radio talks on the care of the eyes. We are pleased to publish here an English translation of one of these talks—that of Prof. F. de Lapersonne, noted ophthalmologist of the University of Paris, who is president of the International Association.

IN terms of human understanding, the word *blind* is a most powerful word. To the mind of man, there are few greater misfortunes than the loss of sight.

It is estimated that there are at least two and a half million blind persons in the world, if one accepts the figures of official censuses; but we know that wherever detailed studies have been made the official figures are shown to be only half of the actual number. And for every blind person, how many are there whose vision is so low that they are seriously handicapped in the effort

to earn a living? It is difficult to estimate the unhappiness and distress represented by these facts.

In our western world, there are many and powerful organizations that make it their business to help the blind. In the Orient, unfortunately, these efforts would seem microscopic. The immensity of the problem there exceeds the possibilities of human endeavor. What is possible—what is necessary and urgent—is to dry up the source of future blindness.

Taken in the beginning, most of the diseases which threaten the loss of eyesight are curable. The majority of those who are blind need never have been so. It cannot be said forcefully enough that, at the present moment, there is no scourge against which we are better equipped to battle. Simple, everyday measures of hygiene, within the reach of everyone, are enough. A few drops of silver nitrate, instilled at the proper time, prevent ophthalmia neonatorum, or "babies' sore eyes." Smallpox, a frequent cause of blindness in our colonies, disappears with vaccination. Protective goggles, worn at work, reduce the rate of eye accidents from five to one. It is simply a matter of hygiene, a matter of elementary precautions. Why, then, is it that in spite of this there are so many blind, so many whose sight is endangered?

In France, alone, the situation is very serious: in the entire country there are 30,000 blind persons; in Paris, 40 per cent of compensation for permanent incapacity is due to the results of accidents to the eye. In the colonies, about 50 per cent of the native population have lost sight or are threatened with blindness. In Tunis, 90 per cent of the school children are victims of trachoma. Consider the loss which these facts demonstrate: at home, in the barracks, in the workshops. If blindness is preventable, if measures which can prevent it are simple and within the reach of all, what do these statistics say to us? Unhappily, there is only one possible explanation: ignorance.

The goal of the French Committee for the Prevention of Blindness is, above all, education in sight conservation: to open the eyes, the minds and the hearts of the people to the extent of the damage and to the necessity for bringing forth the means of remedying it. Its work has international responsibilities, since France has been chosen as the seat of the International Association for Prevention

of Blindness, whose secretariat is in Paris. Where would one find a better basis for the co-operation between peoples of different nationalities than in the alleviation of human suffering?

The work of the national committee comprises the many and varied tasks which are implied in a program for the conservation of sight: the battle against trachoma in the colonies; the campaign against venereal diseases; the institution of prenatal care for expectant mothers; the protection against eye accidents in industry; educational projects, such as the creation of special classes for children with seriously defective vision, and, above all, the education of people in the conservation of sight.

With the conviction that such a program can leave no one indifferent, that public opinion will respond warmly to its appeal, the French Committee for the Prevention of Blindness looks directly to all those in authority and to all those with good will for their co-operation in the task which it has undertaken. The national committee is poor. In one way, this is a spur to constant endeavor. Great effort will be necessary to make it known and substantial results will need to be achieved to make it appreciated. Give the committee the opportunity to do both. Do not leave it unarmed and impotent before the task which awaits it.

Light for Vision Testing

Mary E. Stebbins

HERE is a description of a portable, lighted case which is being used successfully for routine vision testing with the Snellen chart

CORRECT light, properly placed, constitutes one of the most important details of vision testing, which is of little avail unless accurately done. There should be sufficient, evenly distributed light; the Snellen chart should be free from shadows and glare; the person whose vision is being tested should face a dark or neutral background and have no light on or in his eyes.

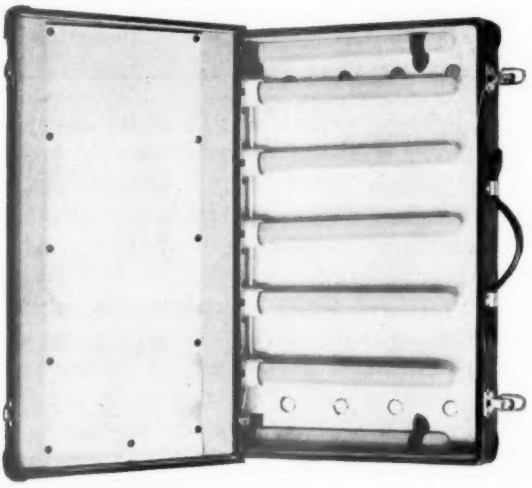
A cabinet or case containing electric lamps behind the chart seemed to be most desirable; one that could be easily carried about by hand and readily and quickly set up for use would greatly facilitate routine vision testing for those who are frequently so engaged, and in various places, such as teachers, public health nurses, and doctors doing school testing and similar work.

Keeping those points in mind the Department for the Prevention of Blindness of the Missouri Commission for the Blind, with the assistance of Mr. Phil V. Brown, an illuminating engineer, and Mr. Clarence W. Bahn, experimented for more than a year in an effort to develop such a portable lighted case, with the result that one has been evolved which is being found satisfactory.

The case, which is light in weight and shaped like a suit case, is of black, imitation leather; it has a handle on one side so that when being carried the lamps are upright in their sockets; contains five lamps and is wired for electric current. Provision is made inside the case for carrying two extra lamps for immediate replacement in case one burns out during use. A removable cover protects the Snellen chart and lamps when the case is not in use. The

special, long lamps are very carefully spaced to eliminate shadows, to give the desired even distribution of light, and are frosted to eliminate glare.

The Snellen chart is thumb-tacked inside an opening in the front of the case (in front of the lamps) to keep it free from vibration. It is placed as nearly as possible flush with the edge of the case to avoid any unnecessary space between the cover card and the symbol being shown.



Case open—shows arrangement of lamps and Snellen chart.

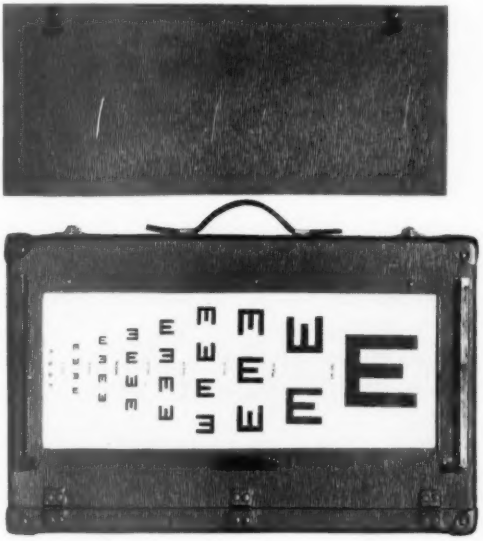
The case is asbestos-lined to protect against fire from the heat generated by several lamps in the limited, confined space. Two rows of openings, one at the top and one at the bottom of the back of the case, permit ventilation and the escape of much of the heat.

Protection to the case and a convenient place for carrying connecting cord, twin socket, cover cards, etc., are furnished by a simple, khaki-colored, cotton slip cover, on the front of which is a large patch pocket with envelope cover which closes with snaps.

During vision testing, all parts of the chart except the symbol being shown are concealed behind a black cover card. This

protects the eyes being tested from the light which would otherwise shine through the chart, refuting its own end.

In working out the details of the case it seemed necessary to keep it as simple, as compatible with efficiency, and as light in weight as possible, and to keep the purchase price down to the lowest limit if the case was to be available for general use by individuals or organizations in any number. Certain refinements would be possible and desirable but all add to cost.



Case—slide removed to expose Snellen chart.

Some difficulty was experienced in finding a manufacturing concern willing to take over the making of the case for present and future orders and willing both to make the case and to install the necessary sockets, wiring, etc. A trunk manufacturing concern* finally consented, and is now making the case complete with all electric fixtures and ten feet of connecting cord. The Snellen chart and the cloth cover are not included with the case as delivered by them.

*Herkert and Meisel Trunk Co., 910 Washington Avenue, St. Louis, Mo. Price, $12.50.

Late in August the first finished case was delivered to the Department which developed it; less than a month later two school boards and one eye conservation organization, other than the one by which the case was developed, had supplied themselves with such cases. Requests for information about the cabinet have since been received from Illinois, Massachusetts, and West Virginia. The Missouri Commission for the Blind, therefore, feels justified in believing that it does fill a need and will prove a serviceable and satisfactory adjunct to sight conservation programs.

Cataract—Its Relation to Medical Social Work*

John M. Wheeler, M.D.

THE medical social worker is of especially valuable assistance to the ophthalmologist in cataract cases because she can obtain important information which otherwise might not be secured during the patient's brief visits to the eye clinic

A FEW centuries before Christ, Aristotle and his friends traveled about and were especially interested in coining words—they were very good at it. They noticed in the eyes of certain blind people a green reflex, so that they imagined something green was growing in the eye. Thus they coined the word "glaucoma," meaning green growth. In certain other people who were blind, they noticed a white pupil. They knew nothing about the anatomy of the eye. Something in the pupil appeared grey or white—knowing a water-like fluid circulated in the eye, they obtained the impression that, as it got to the upper part of the eye, it fell down so that foam was formed. They thought the water-like fluid falling into the lower part of the eye resembled a waterfall, hence they named it "cataract." Some of these names have stuck and are much more interesting than many of our modern scientific terms.

Physiology of Cataract

Cataract is an opacity of the crystalline lens of the eye. The lens is formed early in embryonic life from an infolding of the superficial skin. A pocket is formed as the process goes on and grows deeper and deeper, until finally it closes over entirely. Later the

* Presented during the series of study meetings on Medical Social Service in Eye Clinics arranged by the Committee on Development of Social Service in Eye Clinics of the Medical Social Service Section of the Welfare Council of New York City.

lens becomes entirely detached; it remains clear and never has blood vessels. It is so clear that rays of light go through almost without interference. These embryonic cells, then, which were on the surface, become folded in so that we have a lens body which is almost round, and the cells of which are arranged in layers like an onion. The lens cells continue to multiply and instead of being cast off, as they are from the skin, they accumulate. Normal lens cells are clear and remain clear. If at any period in the growth of the lens these new cells are not properly nourished, the particular layer of cells undergoing formation becomes opaque. Opaque lens cells go under the name of cataract. If in the process of the development of an infant nourishment of the lens cells becomes deficient, we may have an opaque layer of lens cells, or what is known as congenital cataract. We may have the opaque process completely involving the lens, and have a complete cataract. So that, either in the early formation of the lens, or late in life, we may have development of cataract.

Different Types of Cataract

Among the many types of cataract are the juvenile and senile cataracts and cataract that develops in diabetes. In diabetes, there is a toxic process which interferes with the nutrition of the lens and it becomes cataractous. There is, in addition, the cataract which results from an injury, which is called traumatic cataract. Senile cataract comes on late in life; cataract from disease may develop at any time.

It is well to bear in mind two main classifications: one, the non-progressive cataract, and the other, the progressive cataract. Non-progressive cataract is one which forms early and may remain throughout life, although it may not seriously interfere with transmission of light through the lens. Congenital cataract has not much tendency to increase. We can speak of cataracts which tend to remain the same through life, and those which progress through the years.

Diagnosis and Prognosis

Probably one of the most frequent mistakes is that of diagnosing all sorts of things as cataract. A common lay mistake in diagnosis

is to call a scar of the cornea a cataract. A large corneal scar is very easily seen and is very commonly called cataract. A cataract concerns the lens only. Social workers should be able to give patients an idea of what cataract is. They should be able to get the idea over to them that cataract is not a film drawn over the eye, but is something within the eye. In order to get rid of cataract the lens which is cataractous must be removed.

Congenital Cataract.—There is no medicinal treatment that is available for the congenital cataract. If the cataract considerably more than fills the pupil and is dense, an operation is required. If the cataract is smaller than the pupil, it may be possible for the patient to see around it and to have good sight.

There are two ways of operating for congenital cataract. One way is to remove part of the iris. If a portion of the lens is opaque, it may be possible to improve vision by making an opening in the iris in front of a relatively clear part of the cataractous lens, permitting light to pass by the cloudy area of the lens. In other cases an incision in the lens capsule must be made, so that the aqueous fluid may mingle with the lens cells and favor their absorption.

Social workers, if they understand the physiology of congenital cataract, will be able to explain to the satisfaction of parents that a single opening in the capsule may not be enough. It may be necessary for the surgeon to make more than one incision in the capsule of the lens, as all cells may not be absorbed as a result of the first operation.

Senile Cataract.—Cataract that comes on in later life is best known as senile cataract. It goes through certain steps of progression. If a cataract forms, the lens swells so that as the lens fibers are dying and become liquefied, the lens changes shape. After the swelling develops, the lens becomes more powerful, and it may bring rays of light to a focus in front of the retina. This means that the patient becomes somewhat nearsighted. This condition is known as "second sight." Old people become very much like children. The development of cataract is a manifestation of senility. The patient with early cataract brags about reading without glasses, but never about not seeing well at a distance. It would be foolish to tell all people who have "second sight" that they are developing cataracts. They may die before cataract

develops to serious proportions, so we do not tell them. They may develop other manifestations that will make it necessary for them to know. The patient may develop glaucoma, or other conditions may develop which may interfere with sight, or the lens center may become opaque, so that the patient must be told. It is frequently useless for people to know they have cataract if the sight is not badly impaired. When we must explain to a person that he has cataract, let us do it as tactfully as possible. Let him know that there is really nothing to be alarmed about. If it should become necessary for the cataract to be removed, the chances are that he will have good sight again.

The Outlook for Useful Vision

In congenital cataract, if we take out the lens by the needling operation, we are robbing the patient for life of his ability to focus. With a child, the surgeon is robbing him of something very valuable if he destroys his ability to focus by removal of his lens. This must be taken into consideration when an operation is advised. In the old person, the power of accommodation has gradually been lost. It has disappeared over a period of ten, twenty, or forty years, and he does not feel much worse. Take out the cataract and, as he has not lost very much accommodation, he does not feel the change as a younger person would.

When Shall We Operate?

The proper time for an operation for cataract, in my opinion, is when the patient is functionally so seriously impaired as to vision that he is unable to continue his work or to get on with the use of his eyes. Some will not agree with me about that, preferring to wait until the cataract is entirely ripe before operating.

There is a question of whether cataract should be removed when developed in one eye, if the vision is good in the other, and there is a difference of opinion about that. In a young person, cataract might cause a real deformity. The disadvantage is that there is a grey pupil instead of a black one. It is usually for the sake of appearance that the cataract is removed when it exists only in one eye. In an older person, I should never remove it where one eye alone is involved.

If a cataract is removed from one eye in an old person, the images in the retinas do not fuse properly. The patient is confused by two images, and if he tries to fuse them he is very miserable. It is not feasible to prescribe a lens which will enable both eyes to focus together. The condition must be explained by the social worker, who should get her patient to understand this fusion difficulty.

Summary of Discussion

At the time of patient's first visit to clinic, when a diagnosis of cataract is made or treatment to prevent the development of cataract is instituted, the social worker makes her first contact with the patient. So that there may be no misunderstanding or loss of time, she interprets the diagnosis to the patient, seeks his co-operation, and endeavors to remove any obstacle which may block the effectiveness of the prescribed treatment.

As many cataracts are complicated by inflammatory diseases, the removal of the foci of infection and the improvement of the hygienic surroundings is most essential. The social worker may be the factor in making this possible. With the knowledge that individuals exposed to excessive glare and heat while working are prone to cataracts, it is important that working conditions be controlled.

Because conditions that interfere with the nutrition of the mother may result in development of cataract in the newborn child, prenatal care should include proper nourishment of the mother.

By bringing the evidence of these social factors to the doctor and to others concerned, the social worker may contribute to the successful treatment of cataract.

Editorials

Future of the Sight-Saving Review

AS THE SIGHT-SAVING REVIEW approaches its second birthday, it would seem an appropriate time to evaluate the progress which has been made and, on this basis, to formulate plans for the future.

Although the REVIEW was undertaken in the midst of a great economic depression, during a period that has seen a downward trend in the affairs of individuals and organizations, its first appearance met with a hearty welcome; and its slowly but steadily growing subscription list has been testimony to its value. Comment in scientific, educational and health journals, as well as in the daily press, has not only been favorable but has also indicated the need for such a journal.

The SIGHT-SAVING REVIEW gratefully acknowledges its indebtedness to the contributors whose co-operation has done so much to give the magazine its ranking in the health field, and looks forward to continuing to offer authoritative articles and reviews in the field of sight conservation.

In the two-years' existence of the SIGHT-SAVING REVIEW valuable criticisms and recommendations have been received. Since the success of any journal depends largely upon the interest and the response it evokes, the editors present three suggestions which have been received.

Reduction in Price.—In view of the financial stringency which has been imposed upon many individuals and organizations, it has been decided to reduce the subscription cost of the REVIEW from $3 to $2 per year. This substantial reduction, it is hoped, will enable a considerable number who have expressed interest in the magazine to become subscribers. The change goes into effect with the March, 1933, issue. Those who subscribed at a date later than March, 1932, will have the benefit of the reduced rate through an extension of their subscriptions.

Glossary.—Although the articles and other material presented in the REVIEW are always prepared for a lay reading public, it is almost inevitable that specialized terms should occasionally be used. It has been suggested that a brief glossary would clarify, for those of us outside of special fields, words of uncommon usage.

Readers' Forum.—While the editors seek to present the numerous points of view in conservation of vision, particular problems—medical, educational, or social—frequently arise on which readers may differ from the authors or which they may feel need amplification. A forum section for the use of readers would offer an opportunity for discussion and exchange of opinion on various aspects of sight conservation. Individual questions would be turned over to consultants in the particular field. This department, obviously, would require the full co-operation of readers.

These two latter projects, which it is hoped will increase the service of the SIGHT-SAVING REVIEW to its readers, will be incorporated tentatively in forthcoming issues. The editors solicit most earnestly from the readers of the REVIEW other ideas and recommendations.

The National Society—A Democracy*

The National Society for the Prevention of Blindness represents the will of some twenty thousand people to conserve eyesight. It would seem appropriate at this time of annual meeting and the approaching close of the year to review briefly the way in which the wishes of the supporters of the Society are carried out.

The constituency of the organization is represented by a Board of Directors, thirty in number, who are actively interested from social, humanitarian and medical angles in the prevention of blindness and the conservation of vision. These directors are elected in groups of ten, for three-year periods, by the members of the Society, at the Annual Meeting. The Board meets at least twice a year to review the work in progress and to suggest and pass upon future activities. In the intervals between meetings, it delegates active power for the general business and management

*Abstract of a statement made by the managing director at the Annual Meeting of the National Society for the Prevention of Blindness, held in New York City, December 1, 1932.

of the work of the Society to an Executive Committee. This Committee, consisting of nine members of the Board, holds at least five meetings a year and as many more as may be necessary. Reports of its meetings and actions are made to the Board for formal approval or disapproval.

The program of the National Society is carried out by a professional staff appointed by the Board, with the assistance of a clerical staff. The activities of the staff are recorded and reported to the Board of Directors, and incorporated in the annual report to members. Financial accounts are audited twice a year by a certified public accountant.

Over the period of seventeen years of national corporate life of the Society, much progress has been made in the prevention of blindness; however, we cannot rest at this point. The current need for economy has prevented the undertaking of many projects which might further help to solve the vast problem of preventable blindness and impaired vision. The present economic stress, with its resulting malnutrition, may be reflected in the eyes of the growing generation. This constitutes an additional challenge for vigilance on the part of those who have a responsibility for the conservation of vision.

Jessie Ross Royer

It is with sorrow that we write of the recent death of Mrs. Jessie Ross Royer, staff associate of the National Society for the Prevention of Blindness from November, 1926, to October, 1928. During her period of service with the Society, Mrs. Royer initiated a technique of testing the vision of preschool children which has made possible a more general detection of eye difficulties at an early age; by her wise, forceful and diplomatic approach to professional and lay groups she built the foundation for an eye health program that is of ever increasing significance.

The National Society recognizes with appreciation Mrs. Royer's contribution to the prevention of blindness and feels a deep sense of loss in the passing of a valued associate.

Note and Comment

Proper Lighting Pays.—That efficient lighting has a concrete dollars-and-cents value was the discovery of one manufacturer employing a thousand men and women. In an effort to reduce his accident compensation bill, he modernized the plant lighting; his compensation bill fell from $15,000 to $6,000. After deducting the extra lighting costs involved in improved lighting, he found that he had made a net saving of $1,700. The advantage to his employees in saving of pain and inconvenience is a matter which cannot be calculated.

Direct Observation in Measuring Eye Movements.—Are direct observations on eye movements sufficiently accurate to obtain an actual picture of the eye in reading? Francis P. Robinson and Paul G. Murphy of the State University of Iowa made an experiment, in which they photographed and observed directly the eye movements of a group of readers, and found, according to their report in the August 19 issue of *Science*, that direct observation gives a prediction of eye movements at best only 64 per cent better than chance. For preliminary diagnosis, direct observation may suffice; for accurate study of eye movements in reading, photography must be used.

War Against Ophthalmia Neonatorum in New York State.—In a determined effort to eliminate ophthalmia neonatorum as a cause of infant blindness, the New York State Commission for the Blind and the New York State Department of Health, through its Division of Maternity, Infancy and Child Hygiene, are coordinating their efforts to prevent and cure this devastating disease and cause of lifelong visual handicap. During the year 1931–1932, 79 cases came to the attention of the Department of Health and were investigated by the Commission's Prevention of Blindness Department. In 20 cases, the infection developed before the third day of life and occurred, presumably, at birth; the remainder developed later and apparently were caused by contact with a diseased person. About 50 per cent of the cases were due

to the gonococcus germ. Because of the immediate and thorough care outlined by the sanitary code and executed under the direction of the Prevention of Blindness Department, only two of the 79 infants lost complete sight, and 52 recovered full, unaffected vision. Prenatal care, and precautions at birth and after, would have saved two children's sight, as well as the cost of the elaborate medical and nursing care given to these needlessly infected babies.

As an added precaution in the prevention of blindness from ophthalmia neonatorum, the Westchester County (N. Y.) Department of Health issues the warning that although the sanitary code of New York stipulates the use of either silver nitrate or an equally effective substance to be used as the compulsory prophylactic in the eyes of newborn babies, experience has shown that there is as yet no substitute for the effective action of silver nitrate. Of the eight cases of ophthalmia neonatorum which have developed in the county within the past few months, all occurred when a substitute prophylactic had been used at birth.

New Eye Clinic in Michigan.—The Children's Fund of Michigan will soon establish a new eye clinic in Iron County for the eye examination of all school children and for the provision of glasses and treatment for those who cannot afford to pay.

Prevention of Blindness Popularized Abroad.—"Save Your Eyes" was the message of a recent issue of *L'Animateur des Temps Nouveaux* which devoted a special issue to make known, in popular language, the endeavors of the International Association for Prevention of Blindness. Outlining tersely and graphically the structure of the eye, the primary causes of blindness, the hygiene of the eye and points in prevention of eye accidents, this popularized pamphlet has met with a most hearty reception, according to the August 12 issue of *L'Animateur*. Circularized officially throughout French Africa, it inspired a broadside for elementary school children; authorities in India, interested in the problem of prevention of blindness, have sought to have it translated into English and the Hindu dialects; Mr. Bishop Harman judged the pamphlet to be one of the best of its type that has yet been presented.

County School Ophthalmic Service.—The primary objects of a school ophthalmic service are preservation of sight and correction of visual defects. In describing the eye work done by the Derbyshire County Health Department in England, in the August 6 issue of the *Medical Officer*, Dr. T. E. A. Carr emphasizes the importance of the establishment of refraction centers and the need for co-operation with local hospitals for eye treatments and operations. He mentions in particular the difficulty of adequately treating squint under a school eye service, since the important step of fusion training is almost impossible to carry out over a wide territory. This paper again demonstrates the serious efforts being made by local health authorities in England to prevent blindness and conserve sight.

Ophthalmological Society in China.—Twenty ophthalmologists met recently at the Peiping Union Medical College to organize a Chinese ophthalmological society. From the richness of ophthalmological history in China and the full field for ophthalmological aid, interesting reports may be expected from this group.

Systematic Attack on Trachoma in Rural Turkey.—A thorough and intensive attack on trachoma is being made in rural sections of Turkey. In a traveling unit, a physician, who is a trachoma specialist, and two sanitary inspectors and dispensing physicians give rural villages semi-yearly inspections and establish treatment centers; stringent laws bar the persons suffering from trachoma from contact with well persons, particularly in schools, offices and institutions. Combined with the practical work of finding and curing the cases of trachoma, an intensive campaign for the hygienic education of these people is being carried on.

Canada Finds Industrial Eye Accidents Most Prevalent.—Of the 824 cases of blindness due to accident, registered with the Canadian National Institute for the Blind, 252 were due to accidents met in industrial occupations, and 149 to accidents which occurred in play. Scissors and knives, shotguns and balls were the seemingly harmless agents in producing blindness in this group; in industrial occupations, explosions accounted for half of the eye casualties,

and entry of foreign matter into the eye accounted for a quarter. From a study of Canadian press clippings during the spring and summer months, it was found that the most frequent agents of eye accidents, apart from industrial causes, were guns, dynamite, catapults, arrows, fireworks, pucks, etc.

Sight Without Vision Center.—In spite of the common idea that without the vision center of the brain total blindness necessarily follows, Dr. Donald G. Marquis demonstrated before the American Psychological Association meeting at Ithaca, New York, that dogs whose vision centers were removed are able, after re-education, to distinguish between different shades and intensities of light. After the loss of the visual cortex the habit was impaired, but was relearned in about the same time as that required originally.

Miners' Nystagmus and Mine Lighting.—When 27 men in a coal mine in England were equipped with high candle power electric lamps, for a six-months' period, no signs of nystagmus developed among the 22 who started out with normal vision; and among the five who, at the beginning of the experiment, were suffering from nystagmus, two were cured and one considerably improved. At the end of two years, all the nystagmus cases were without symptoms or characteristic reflexes, and none of the others had developed the disease. In the control group, equipped with ordinary miners' lamps, one new case of nystagmus developed.

Help for the Disabled.—Current information indicates that fully seven million people are handicapped in earning their living, by accident or disease which prevents them from engaging in any occupation, or which makes a change of occupation imperative. In this group are included crippled children, injured workmen, the blind and deaf, the victims of tuberculosis and heart disease. The National Rehabilitation Association aims to secure for such persons special training for work that they can do, and special help to obtain employment, through general public education of the needs of the handicapped and through co-operation with social agencies in the field.

Warning Against Gonorrheal Ophthalmia.—The complications of gonorrhea are often most severe, but none can be so drastic as

the loss of sight through the infected person's carelessly rubbing his eyes and carrying to them this dreaded infection. Ophthalmologists who have seen cases of gonorrheal ophthalmia in adults should warn their fellow physicians, who, in turn, should warn their infected patients, of the quick and dangerous spread of the gonococci to the delicate tissues of the eyes. Two recent cases of eye infection caused this warning to be made editorially in the Wyoming section of *Colorado Medicine* for October.

Why Black Type?—Although it has been accepted that black type on white paper is more legible than white on black, very little research has been made to prove this. In their "Studies of Typographical Factors Influencing Speed of Reading," the sixth of which appears in the June, 1931, issue of the *Journal of Applied Psychology*, Donald G. Paterson and Miles A. Tinker report finding, through experiment, that the legibility of white type on black stock is slightly less than the inverse, and more usual, arrangement; they recommend that when the white type is used on black background to attract attention, the amount of reading matter be nominal so that the question of reading speed is unimportant.

In a further experiment reported in the same *Journal*, Grace Holmes finds that black type on white background is 14.7 per cent more legible than white on black. These experiments bring out the basis for the assumption that black type on white background is the most logical combination for ordinary reading.

Sight-Saving Classes in Massachusetts.—There are now 36 sight-saving classes in the state of Massachusetts, according to the latest report of the Department of Education, division of the blind. Experience has taught that the facilities of these classes for the conservation of vision of children with serious visual handicaps need to be made available to one child out of every 700 of the school population. Not only is the child with low vision assisted in reaching the academic levels of his normally seeing companions, but he learns without the psychological handicaps which he would encounter in the usual class; vocational preparation is stressed in these classes in order that such children may enter a profession or business where sight is not subjected to strain.

Traveling Health in Pennsylvania.—Pennsylvania is making a special effort to conserve the health of her rural preschool citizens through use of the mobile health unit, or caravan clinic. While no corrections are made by this traveling health center, of which there are two, the aim is to discover where medical treatment is needed and to stimulate the local committee to co-operate with the public health nurse in getting defects corrected before the school doors open. Part of the procedure in checking up the physical health of these children lies in the application of preschool vision testing, which, taught by the Sight Conservation Service of the Council for the Blind, follows the most accepted method of testing for young children. Of 9,000 children tested this summer, 500 were found to be shortsighted, and 10 blind eyes were discovered. Not only does the check-up obtain for the children about 50 per cent correction, but, in talking with the mothers during the examinations of the children, the principles of child health are constructively taught.

The Maddox Cheiroscope for Correction of Squint.—The principle of pressing the hand into service for the eye is the basic idea of the Maddox Cheiroscope; vision is divided with an angled mirror septum so that the eyes function separately. The message is sent to the brain through the normal eye, and the afflicted eye is asked to translate the message by reproducing the drawing on the opposite side of the drawing board. Thus, mental, manual and visual co-ordination is developed. This mechanical orthoptic aid endeavors to restore vision in the amblyopic eye; to link together in the visual brain centers corresponding retinal points; and to build up the fusional urge and fusional reserve.

Fireworks to Be Banned in New Jersey.—Complete elimination of the use of fireworks is the ambition of the Bureau of Explosives of the Department of Labor in New Jersey. Under the present statute, "dangerous fireworks" are prohibited from being manufactured, sold or transported in the state. Retail fireworks are offered for sale only from June 20 to July 5. Before public displays are made, bonds for not less than $3,000 nor more than $25,000 must be posted to indemnify any possible accident. Such practice

has materially reduced accidents on the national birthday in New Jersey.

Tinted Lenses Investigated.—Are the advertising claims of manufacturers of tinted lenses accurate? In behalf of the ophthalmologist who is too busy to investigate all claims for himself, W. W. Coblentz discusses, in the October *American Journal of Ophthalmology*, the properties of tinted glasses, the facts and fallacies in the claims made for them, and suggests standards for future reference. While the prescription of tinted or clear lenses lies properly in the hands of the ophthalmologist, the layman in ordering glasses is often told of the wonders of certain tinted lenses—comfort-giving, glare-absorbing, or some other special claim—and he, too, will find guidance in this balanced criticism of advertising and sales claims.

Put Protection of Eyes in Practice.—It is generally known and agreed that eye protection in industry is necessary and practicable. Yet, in the state of Ohio, according to a report of the Ohio Industrial Commission, 15,714 eyes were cut, burned or punctured during the year 1931, indicating failure to use goggles as a means of preventing eye accidents. Because adequate education of the management and of the workers in safety devices has been shown to bring as high as 80 per cent reduction in eye injuries, it is apparent that eye protection through goggles and other safety devices has yet to be made a real factor in the industrial world.

Glasses Aren't So Bad.—No matter how thoroughly mothers and grandmothers realize that glasses are necessary for conservation of the vision of a child with a visual error, none of them welcome the "blinkers," and particularly for little girls they regret the need to wear glasses. But Peggy Wood, a stage star who is as famous for her wit as for her beauty, writes in the *American Magazine* for December that "Glasses Aren't So Bad." While she sympathizes with the small wearer of glasses who must spend a long time laughing off the name of "four-eyes," she finds that glasses need not be too great a cross. Well-chosen frames may enhance the beauty of some eyes, and certainly the comfort of seeing clearly and without effort through glasses is more conducive

to eye beauty than the effort involved in squinting and straining to see without them.

New Test Chart.—A test chart which, it is claimed, may measure within an eighth of a diopter the astigmatic error of eyes, without undue fatigue to the patient or long study on the part of the ophthalmologist, has been described in the October-November *Guildcraft.*

First Aid for Eyes.—The first aid station of a small plant may be adequately staffed with a nurse, for most accidents, according to an article on "The Value of Competent First Aid," in the November issue of *Safety Engineering.* But, in the case of an eye accident, particularly of a foreign body in the eye, only a physician is competent to handle the situation. This is as true for small and apparently simple eye accidents as for those which are obviously of serious import.

For Aging Eyes.—As years go by, the heart, the lungs, and the arteries grow older and lose some of their elasticity. The eyes, too, share this gradual loss of muscle tone, and, between the ages of forty-five and fifty, most people need the aid of lenses to compensate for the lessening power to accommodate for near vision. This is known ophthalmologically as presbyopia. An editorial in the Wyoming section of *Colorado Medicine* for November urges physicians and their families to realize that this change, a normal one, is one which should be studied by an ophthalmologist, to be sure that no other eye defect or disease lurks under the mantle of middle-aged eye changes.

Electric Eye Succeeds at School.—An interesting experiment has been carried on for two years in the sixth-grade room of a public school in Tuscumbia, Alabama. An electric eye in that room controls the light switch, and, as light fades in the afternoon, or with the passing of a cloud bank, turns on the artificial light; conversely, it turns off the artificial lights as the daylight reaches certain levels of illumination. The pupils in this room have been carefully compared with the pupils of another sixth-grade room where the lights are operated manually. Although the teaching methods and the general class intelligence are the same in both groups, in the classroom where the electric eye guards the illumina-

tion the number of failures fell twenty per cent, while it remained static in the other group.

Charles L. Close.—As the REVIEW goes to press, we learn with regret of the death of Charles L. Close, a valued member of our board of editors since the first issue, appearing two years ago. Mr. Close was eminent in the safety movement in industry and an esteemed friend of the National Society. The United States Steel Corporation and subsidiary companies with which he was associated, attribute much of their success in accident prevention and in improvement of working conditions to his broad vision, his ability to organize, and his unfailing spirit of helpfulness. Beginning a career in business at an early age, Mr. Close was manager of the Bureau of Safety, Sanitation and Welfare of the United States Steel Corporation since 1911. He was one of the organizers of the National Safety Council, serving as vice-president in charge of industrial safety, and was a member of the executive committee at the time of his death. In addition to his co-operation with us on the REVIEW, Mr. Close was a member of the Society's advisory board on industrial eye hazards. Workers for prevention of blindness as well as those promoting safety in industry will feel the loss of a sincere and forceful pioneer.

National Society Notes.—The annual meeting of the National Society for the Prevention of Blindness was held on December 1 at the Russell Sage Foundation Building, New York City. Owing to the present need for economy, the usual conference was omitted. Following the general business of the meeting and the report of the president, Mr. William Fellowes Morgan, Dr. Park Lewis read a paper on "The Prevention of Blindness and the Conservation of Vision as a Co-operative Movement." This paper is being printed separately and will be sent to subscribers of the SIGHT-SAVING REVIEW.

The Executive Committee of the National Society for the Prevention of Blindness called a special luncheon meeting in honor of Mohammed Shahin Pasha, Egyptian minister of health, on September 23, 1932. Conversation centered about the work which the Egyptian government is carrying on in the treatment and

prophylaxis of eye disease, and the possibility of sending a nurse from Egypt to take special training here, with the co-operation of the National Society, in the medical social aspects of the prevention of blindness.

Staff members of the National Society have been actively co-operating with many organizations whose interests lie in related fields of public health and welfare. Mr. Lewis H. Carris, managing director of the Society, gave a talk on conservation of vision at the annual meeting of the National Rehabilitation Association, in Chicago, Illinois, on October 11. At the annual meeting of the American Public Health Association, in Washington, D. C., the week of October 24 to 27, the Society was represented by Mr. Carris and Miss Mary Emma Smith, R.N., director of nursing activities.

Mrs. Winifred Hathaway, associate director, represented the National Society at the annual meeting of the International Association for Prevention of Blindness, in Paris, on November 19. She read a paper on sight-saving classes. On this trip, Mrs. Hathaway took the opportunity of visiting the Maddox Clinic for fusion training in England; she also visited sight-saving classes in Germany, Austria, Switzerland and France.

At the invitation of the Massachusetts Department of Public Health, Miss Mary Emma Smith gave talks and demonstrations of vision testing in Salem, Bridgewater, Boston, Worcester, Pittsfield, Westfield and Hingham.

The National Society will again co-operate with the Greater New York Safety Conference in its fourth annual meeting to be held in February, 1933. The Eye Section, in which the staff of the National Society is particularly interested, promises to be of general interest to those concerned with safety and good health in industry.

Mr. Louis Resnick, director of industrial relations of the National Society, co-operated with the New York State Department of Labor in a radio talk on "What Is Being Done to Protect the Eyes of Industrial Workers? And What More Needs to Be Done?"

We are pleased to announce that Dr. Peter K. Olitsky, of the Rockefeller Institute for Medical Research, has recently accepted membership on the Advisory Committee of the National Society.

Current Articles of Interest

Effective Special Lighting Required by the Modern Printing Plant, W. N. P. Reed, *Inland Printer*, September, 1932, published monthly by Inland Printer Co., Inc., Chicago, Ill. A printer finds that central lighting in the printing plant should be subdued, with auxiliary lamps to lighten working surfaces. All printshop workers require rest for the eyes, and the softly illuminated background affords agreeable contrast. Experienced printers know more about the type of light needed at their particular jobs than do experts in lighting in the opinion of the writer.

Sight-Saving Classes in the Public Schools, Edward E. Allen, *Massachusetts Teacher*, February, 1932, published monthly by the Massachusetts Teachers Federation. A message to parents of children with defective sight interprets the importance of the sight-saving class to such children in terms of physical, educational and psychological values.

Clinical Significance of Fields of Vision, Louis Lehrfeld, M.D., *Pennsylvania Medical Journal*, October, 1932, published monthly by the Medical Society of the State of Pennsylvania, Harrisburg, Pa. Attention is drawn to the important but often neglected test of plotting the field of vision, in determining the presence and extent of certain general and localized disorders, particularly of the nervous and vascular systems; the writer outlines the physiology of the field of vision, the tests employed for its measurement, and the significance of variations of field of vision in certain general disorders.

The Eye Fundus Lesions of Nephritis, Albert E. Bulson, M.D., *Texas State Journal of Medicine*, October, 1932, published monthly by the State Medical Association of Texas, Fort Worth, Texas. The retinal lesions found in nephritis are only part of the clinical picture; they become diagnostic when aligned with the findings of blood pressure, heart, and urine examination. Since eye lesions

often antedate all other symptoms, the ophthalmological examination has a special rôle in prevention of acute nephritis.

Controlled Reading, David W. Wells, M.D., *American Journal of Ophthalmology*, June, 1932, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. A description of a device for reading which forces both eyes to read simultaneously. This method has the advantage over stereoscopic exercises in that it may be used for all reading purposes until the fusion reading habit is firmly established.

Neurologic Features of Pernicious Anemia, Richard H. Young, M.D., *Journal of the American Medical Association*, August 20, 1932, published weekly by the American Medical Association, Chicago, Ill. From the records for 18 years of patients with pernicious anemia reporting to one hospital, a study of the less obvious neurologic lesions has been made. Among these are the eye symptoms. Eleven per cent of patients having ophthalmological examination showed retinal hemorrhage; 80 per cent of these had psychotic manifestations. Other ocular features were optic atrophy, nystagmus, and alterations in the pupils.

Headaches of Ocular Origin, Charles A. Bahn, M.D., *New Orleans Medical and Surgical Journal*, September, 1932, published monthly by the Louisiana State Medical Society, New Orleans, La. Because the visual mechanism is at least partially responsible for nearly 40 per cent of all chronic headaches, an ophthalmic study has particular value. Location of the headache may furnish a clue to its origin; astigmatism causes more severe and more frequent headaches than the other refractive errors, which, however, are the most frequent ocular cause of headache. Light exposure may cause headaches of great severity; in middle life, glaucoma is a relatively frequent cause of headaches. Those internal diseases causing headaches, such as syphilis, diabetes and nephritis, may be found apparent in the eye-grounds.

Some Observations on the Treatment of Interstitial Keratitis, R. H. Cowley, M.D., *Kentucky Medical Journal*, August, 1932, published monthly by the Kentucky State Medical Association,

Bowling Green, Ky. Interstitial keratitis is not a disease but a symptom; while syphilis is the most common cause, the physician, in the absence of this origin, should consider tuberculosis and focal infection.

Dietary Deficiency and Ocular Disease, I. S. Tassman, M.D., *Archives of Ophthalmology*, October, 1932, published monthly by the American Medical Association, Chicago, Ill. The delicate relationship between vitamin deficiency, and, in particular, vitamin A deficiency, and the epithelial structures of the eye is outlined, with references to various research projects and to clinical studies in the literature of nutrition and ocular pathology. The effect of lack of vitamin G is also shown, and suggestions are made for correcting such dietary deficiencies.

Etiology of Trachoma With Reference to Relationship of *Bacterium Granulosis* (Noguchi) to the Disease, Ida A. Bengtson, *Public Health Reports*, September 16, 1932, published weekly by the United States Public Health Service, Washington, D. C. A review of the literature on the subject of the isolation of *Bacterium granulosis* from trachoma in many parts of the world shows a wide variation in the results obtained. Despite the disparity of the findings of the various students of trachoma, it is conceded that the finding of *Bacterium granulosis* in this country and in certain other parts of the world merits its consideration as a possible etiologic factor in trachoma. More efficient methods of demonstrating the organism are greatly to be desired.

Hereditary Blindness, Lewis H. Carris, *Journal of Heredity*, August, 1932, published monthly by the American Genetic Association, Washington, D. C. In any catalogue of the major causes of blindness, heredity plays a rôle. While it may be assumed that only one in ten thousand is blinded through inheritable causes, it is important for the social and medical student to know those types of blindness that may be transmitted. A list of the hereditary causes of blindness is given.

The Eyes of School Children, Edward Jackson, M.D., *American Journal of Ophthalmology*, October, 1932, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. The importance

of testing the eyes of preschool children is emphasized in this paper, and the technique of making group tests outlined. Ophthalmologists are urged to institute these early vision tests for the greater education of the laity in conservation of vision.

The Modern Conception and Treatment of Comitant Strabismus, William Thornwall Davis, M.D., *Kentucky Medical Journal,* August, 1932, published monthly by the Kentucky State Medical Association, Bowling Green, Ky. Because squint can be fully cured only in the early years, the author recommends that serious attention be given the first signs of cross-eye. Occlusion may be undertaken during infancy, correction by refraction as early as the toddler stage. If the squint is not too pronounced, fusion training may effect a cure, and operation by the Jameson recession is recommended as a reliable operation. For the best interests of the child, both educationally and emotionally, correction of squint should begin well before school age so that the child may enter school without this emotionally painful handicap.

Putting Clearness Into Safety Glass, A. F. Randolph, *Safety Engineering,* September, 1932, published monthly by the Safety Magazine Publishing Corporation, New York, N. Y. Because safety glass may prevent many accidents to the eyes, as well as to other parts of the body, its improved manufacture—involving reliable visibility and stabilized color, as well as clarity—is of particular importance to those concerned with the prevention of blindness. The use of this glass is not confined to automobiles, but extends to machine guarding, unbreakable goggles for industrial eye protection, and glasses for active sports wear.

Public Health Education: The Functions of the University and of the Private Foundation, John Sundwall, M.D., *Public Health Reports,* October 7, 1932, published weekly by the United States Public Health Service, Washington, D. C. Since we cannot deal effectively through legislation and regulation with the innumerable factors involved in individual health conservation, education is the most effective weapon. The rôle of universities, foundations, commercial firms and insurance companies in broadcasting health

information and education to the public is evaluated as being that of leadership in the actual work of service and education.

Light-Sense, Percy W. Cobb, M.D., *American Journal of Ophthalmology*, October, 1932, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. The simplest visual stimulus requires not less than four terms for its description: the brightness of the figure; the brightness of the background; the size of the object; and the time of action of the object. Tests of light-sense are the brightness-difference test and the dark-adaptation test, of which the latter alone has shown reliability. The writer outlines details of method in making this test and precautions towards insuring uniformity in the results.

The School Nurse's Part in Conserving Sight, Mary Emma Smith, R.N., *Public Health Nursing*, September, 1932, published monthly by the National Organization for Public Health Nursing, Inc., New York, N. Y. Outlining objectives in a sight conservation program in school, the writer suggests: providing an environment which will not cause deterioration of the vision of the pupils; determining whether the child's eyes are normal; instituting corrective measures and treatments for those found to be defective; building up in the child certain knowledge, attitudes and practices that will result in the best physical and mental health possible. Opportunities for the nurse to co-operate with the school and the medical profession in conserving sight are suggested.

Headache in Relation to the Eye, Ear, Nose and Throat, Grace Tankersley, M.D., *Journal of the Arkansas Medical Society*, August, 1932, published monthly by the Arkansas Medical Society, Little Rock, Ark. Headache, a symptom found in every branch of medicine, demands careful study as to its cause. The relation between eyestrain and headaches, first pointed out by Donders, plays a primary part in diagnosing the cause of headaches, since from 40 to 70 per cent of headaches may be caused by the eyes. Refractive errors are the primary cause of ocular headaches; often small refractive errors cause greater suffering than gross errors. Overstimulation of the retina through excessive light will cause headache, while incipient glaucoma may cause headaches, often

ignored by the sufferer, thus preventing early discovery of this disease.

"See"-Levels in Lighting, M. Luckiesh, *Electrical World*, August 20, 1932, published weekly by McGraw-Hill, New York, N. Y. Defining the process of seeing as the relationship between the external light, the visual apparatus and the brain, the writer urges the promotion of better lighting in the industrial world to secure the "efficiency, behavior and welfare of human beings as human seeing machines."

The Normal Eye, W. R. Dunstan, M.B., *Medical Officer*, September 10, 1932, published weekly by the Medical Officer, London, England. A study and evaluation of the research made on the normal eye by the special committee designated to inquire into defective vision in school children, as well as of other work done in this same field. Further study in groups of infants and preschool children is recommended before any definition of normalcy may be found.

Glaucoma, D. M. Yazujian, M.D., *Journal of the Medical Society of New Jersey*, September, 1932, published monthly by the Medical Society of New Jersey, Orange, N. J. As with electricity, we are able to recognize glaucoma but we have not yet been able to explain what it is. In this article, the disease is outlined as to its course, its possible medical treatment and its surgical arrest. The author would consider as suspicious of glaucoma all cases of redness of the eyeball, blurry vision and headache in persons approaching and past middle age.

Ocular Exercises, Adolph O. Pfingst, *Kentucky Medical Journal*, September, 1932, published monthly by the Kentucky State Medical Association, Bowling Green, Ky. Because ophthalmological opinion is hastening to refute the claims of medical quacks that eye defects may be corrected by exercises, without the use of glasses, the writer urges the profession not to overlook the value of careful study of the oculo-motor apparatus in eye defects. Quoting Donders and Duane as authorities for consideration of the muscles in eye disturbances, he reminds ophthalmologists that

disorders of the muscular apparatus may play an important part in vision defects.

Complications of Cataract Surgery in India, Louis Bothman, M.D., *Illinois Medical Journal*, September, 1932, published monthly by the Medical Profession of Illinois, Oak Park, Ill. In a report dealing with one thousand cataract operations at the Seth Hilarand Hospital in Shikarpur, Sind, India, the technique and routine of operation are described. Despite the meager facilities of the hospital, the ignorance and superstitious fear of the patients, and the crowded conditions, the sight of nearly all the patients was restored to the point of ambulatory usefulness. An interesting comparison is made between the figures of these thousand cases and a series of three hundred analyzed by Dr. Arnold Knapp.

Understanding the Myopic Child, F. A. Aylesworth, M.D., *Serving Sight*, October, 1932, published by the Canadian National Institute for the Blind, Toronto, Ont. Although myopia may occasionally be hereditary, it is generally attributed to environmental causes in childhood, such as poor lighting, concentrated study, and uncorrected hyperopia in early childhood. Once the condition is established it tends to increase, even when corrected by glasses; in the case of severe myopia, in addition to correction by glasses the eye care and rest possible in a sight-saving class may be the method of procedure.

Researches in Seeing, M. Luckiesh and Frank K. Moss, *American Journal of Ophthalmology*, September, 1932, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. Sight, being more than the activity of the optic apparatus, must of necessity include the factor of light. Daylight represents illumination values far above those of the average artificial lighting installation, and efforts should be made to approximate the daylight levels. Proof of the value of sufficient light is seen in the results of an experiment, when, with an illumination increase from three to 12 foot-candles, in a group with good sight the working capacity increased 14 per cent, while in the group with poorer sight the working capacity increased 22 per cent. The

authors conclude that attention to proper lighting benefits particularly those whose need is the greatest, the visually handicapped.

Preventive Medicine as Applied to Diseases of the Eye, A. Edward Davis, M.D., *American Medicine*, October, 1932, published monthly by the American Medical Publishing Company, Inc., New York, N. Y. The ideal of preventive medicine is to have the well person take care of his health. This is particularly true in relation to the eyes. Ophthalmia neonatorum has been greatly reduced since the concerted movement to prevent this cause of blindness; trachoma, too, has fallen off in this country as a cause of blindness, with the regulation of immigration laws and the increased general knowledge and practice of hygiene. Glaucoma and cataract are diseases of the eye still to be combated, and every ophthalmologist examining a middle-aged person should look for any incipient signs of these diseases. With thorough medical eye examinations at periodic intervals, the use of the eyes may be preserved throughout life.

Industrial Eye Injuries and Compensation Claims Arising Therefrom, Elbert S. Sherman, M.D., *Journal of the Medical Society of New Jersey*, October, 1932, published monthly by the Medical Society of New Jersey, Orange, N. J. A summary of the practical guide for determining loss of vision and liability in eye accident cases, which was formulated for the Medical Society of New Jersey in 1924. The writer explains the purpose of the guide and its application in protection of the injured workman and of the employer against false or excessive claims.

Primary Glaucoma Management, Michael Goldenburg, M.D., *Illinois Medical Journal*, October, 1932, published monthly by the Medical Profession of Illinois, Oak Park, Ill. Since no operation can remove the cause of glaucoma, the author cannot consider operation as a cure. He finds that the various decompression operations offer a more positive avenue of fluid escape and in addition favor fresh aqueous formation. The iridotasis operation accomplishes this result and with less danger, because of its simplicity.

Ocular Symptoms of Faulty Illumination, Walter B. Lancaster, M.D., *American Journal of Ophthalmology*, September, 1932, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. Insufficient light or glare, both common faults of illumination, causes the eye to make unusual effort to gain precision in fixing and focusing on the matter under observation. The writer sets forth accepted opinions on the subject, as well as his own studies.

Book Reviews

COLLECTED REPRINTS FROM THE WILMER OPHTHALMOLOGICAL INSTITUTE OF THE JOHNS HOPKINS UNIVERSITY AND HOSPITAL. Volume I, 1925 to 1929, inclusive. Volume II, 1930 to 1931, inclusive. Baltimore: Johns Hopkins University. Ill.

It has been the custom of many great hospitals to publish in an annual or an occasional volume the worth while publications of its staff. If the group happens to include men of great originality or even of genius, the Pasteurs or Harveys of their time, these volumes become of the greatest interest and even of historic value.

But medicine, which is an art based on a science, changes so fast that contributions which seemed outstanding at the time of publication rapidly become outmoded and commonplace.

Volume after volume of these ancient reports may contain nothing of historical or scientific interest or of social value, while, in a relatively few, outstanding contributions are buried between others which the passage of time has converted into veritable trash.

This was particularly true of the days in which medicine and surgery were almost entirely clinical. We have reports which modern pathology has made ridiculous, and operations which were in their time monuments to the daring of the surgeon and the fortitude of the patient, but which modern resources have made simple and safe and painless, or even entirely unnecessary.

Then, too, as medicine has become more scientific and has required more and more years of laborious poring over theories and confirmation of facts, it has become less and less intelligible and interesting to the untrained mind of the layman. If these two volumes were filled entirely with medical and surgical contributions I should not think of reviewing them for the readers of what is, after all, a lay journal. But they also contain the story of the inception and foundation of one of our great institutions, and of dramatic personalities and sequences which have caught the public imagination as did the work of Grenfell in Labrador, or the Mayos in Minnesota.

We have the whole story in the first volume, told by those who

knew: of the young surgeon and his wife with their churchly ancestry, who mutually agreed to live the life of service in which money was to play a very minor part; and of his skill and tact and kindness which endeared him gradually to countless patients of high and low degree, but did not seem likely to bring him more than local fame. For these are the qualities that remain unsung in countless country parsonages and settlement houses and slum hospitals. But, when there is added to these the indefinite something we call personality—the unconscious instinct to lead, to dramatize things and to catch the public eye, which strangely enough is often found in the very shy and modest, and especially when it is aided by a devoted group of unusual friends—then things begin to happen.

The story is full of human interest. There came to Dr. Wilmer, in what might be called the afternoon of his life, a very unusual woman who was saved from what seemed inevitable blindness; during her long convalescence she was impressed by the personality of her surgeon, by his skill and selflessness and by his ability to build up *esprit de corps* among those about him.

It seemed to her a pity that he should not have a larger institution, where many more people could have the help she had had, and where he could inspire in others his skill and his ideals. And so she conceived the whole idea and proceeded to put it into effect. When she requested a list of patients who might be asked to join her, he flatly refused to have anything to do with it, and it was only by taking into her confidence his white-headed old colored doorman that she was gradually able to build up such a list.

To her gifted touch the money came so easily and friends were so enthusiastic that it seemed a pity to stop at the limit of her original dream. One of the great foundations was appealed to and, with the canny instinct of such groups, decided that it would be a waste of money to finance a plan that would be sure to languish and die as soon as the figure about which it was built should pass away. But they thought the idea itself had merit, and, if Dr. Wilmer would consent to join forces with a university, with its corporate gift of everlasting life, they could and would and did take a very active part.

And so the Wilmer Institute became the ophthalmological depart-

ment of Johns Hopkins University, and its director proceeded to gather about him the men who should make his project well rounded and complete.

The contributions here gathered together are intended to give some idea of the Institute, its sponsors and supporters, and of the staff and of the kind of work each of them is especially interested in.

The dedicatory exercises included an address by the great Viennese ophthalmologist, Fuchs, perhaps the greatest name of his day, a simple, kindly, lovable old man, on the development of ophthalmology in Europe, much of which he saw, and a great part of which he was; and one by de Schweinitz, the dean of American ophthalmology, on its development in America. These two any layman could read and enjoy. Then came an address by Sir Herbert Parsons of England, who chose a more technical subject, which is followed by a hundred or more contributions by the staff, which do not lend themselves to review in any but a technical journal. Some of them are clinical: rare cases with their pathology and treatment; improved methods of handling the commoner diseases, like glaucoma and cataract; descriptions of operations and instruments and the like. Some of them are pure science: studies of ocular chemistry, the physiology of vision, the mathematical studies associated with lenses and optical instruments. Others are of social rather than medical interest: hospital efficiency and management; ophthalmology in relation to public health; military ophthalmology and the like.

Some of them are already almost out of date in the few years since they were written, while others seem still ahead of their time. The pure science studies, if not of immediate practical value, are filed away in the storehouse of knowledge, where perhaps they will fit in with others yet to come and be of the greatest importance.

The future reports of the Wilmer Institute may or may not contain more impressive records of scientific progress. Some of the younger members of the staff, if they fulfill their promise, may in time reach the heights; but it is unlikely that any future volumes will contain more of human interest than do these.

ELLICE M. ALGER, M.D.

THE RELATIVE MERITS OF CURSIVE AND MANUSCRIPT WRITING. Thelma G. Voorhis. New York: Columbia University, Lincoln School of Teachers College, 1931. 58 p.

For the person at all interested in manuscript writing this book merits attention. It is in reality a summary of the findings of investigations which have been made regarding manuscript writing, and the conclusions drawn through studying it in comparison with cursive writing. In it Mrs. Voorhis has given us a brief history of writing and the results of various experiments which have been carried on since manuscript writing was introduced into the United States some ten years ago. She has also described to us in detail her own experiment to determine the influence of manuscript writing on beginning reading.

Her experiment was conducted in six first-grade classes in Public School No. 215, Brooklyn, N. Y., throughout the school year of 1928–1929. The six groups (195 children) taken for the experiment were chosen, as nearly as was possible, on an equal basis in respect to age, intelligence, and reading status. The classes received identical instruction in reading and all other subjects except hand-writing. In that, three groups were taught the cursive and three the manuscript writing. After the initial tests were given in equating the groups, before starting the experiment, surveys were made twice during the year, in April and January, and then again at the close of the school year in June. The tests used to determine the progress made were standard tests—the Detroit Word Recognition Test A and Gates Primary Reading Tests, Forms I and II. In so far as the experiments were conducted under the same conditions, except for the kinds of writing taught, Mrs. Voorhis draws her conclusion that any difference in the results obtained may be attributed to the difference in the writing. She says, "All the data from this investigation indicate that manuscript is distinctly superior to cursive writing in the facilitation of beginning reading." Proof for her statement is given through figures comparing the results of the tests given to the two groups.

While, as the author herself has suggested, experiments with such small groups are not highly reliable, and the results cannot be taken as positive evidence, they are nevertheless suggestive of

the general trend. It is certain that they bring facts before our minds that are worthy of our careful thought and consideration.

To those who are especially interested in the sight-saving class child the book gives a feeling of satisfaction. If manuscript writing does all for the normally sighted child that the experiment tends to show, then it must more firmly establish our faith in its value for the child with seriously defective vision.

ERMA GRILL

PROBLEMS IN THE TRAINING OF CERTAIN SPECIAL-CLASS TEACHERS. Contributions to Education, No. 475. Louis M. Schleier. New York: Teachers College, Columbia University, 1931. 145 p.

In *Problems in the Training of Certain Special-Class Teachers*, Dr. Schleier presents for the first time in one publication all of the existing material which has been published on this subject and also information concerning present practices and recommendations for teacher training programs.

To those who desire to know the laws of the states pertaining to the education and training of both mentally and physically handicapped children in the public schools, the rulings of state boards of education relative to the preparation of teachers of such classes, the courses and curricula now offered in various institutions of higher learning for the preparation of teachers and supervisors of special classes, and the proposed teacher training program for teachers of mentally and physically handicapped children in the public schools, this book will prove of exceptional value.

The various tables showing accumulated data on the different phases of the subject studies are intelligible and explicit. The summary at the close of each chapter briefly, yet clearly and completely, reviews the contents. A useful addition to the book is the bibliography and appendices, which seem to be most complete. In fact the entire book would give definite information on all the investigations made.

MATIE M. CARTER

THE EYE, EAR, NOSE AND THROAT, PRACTICAL MEDICINE SERIES, 1931. E. V. L. Brown, M.D., Louis Bothman, M.D., George E. Shambaugh, M.D., and Elmer W. Hagens, M.D. Chicago: The Year Book Publishers, Inc., 1932. 629 p.

This volume, one of the eight compiled on the year's progress in medicine and surgery, is divided into two sections. The eye section edited by Dr. E. V. L. Brown and Dr. Louis Bothman, occupies approximately half of the book. It offers the reader an excellent review of the eye literature of the past year. While special emphasis has been placed upon foreign periodicals, particularly the German, due attention has been given to English and American contributions. An attempt has been made to include only the most important, interesting and instructive original articles.

The arrangement presents the eye by sections, following the procedure in most textbooks, and includes Embryology, Physiology, Therapeutics and Operations. Each article is under the author's title in bold type and a footnote records the magazine in which the original appeared. Reference is further facilitated by a general index and an index of authors. Each review is brief and to the point, covering the main points of the paper, but avoiding detail. Editorial comment, which is purposely brief, is interjected here and there and is plainly marked.

For the average ophthalmologist, this book is an excellent complement to his general medical library. With the exception of the more available domestic periodicals, the latest literature will be found to be well represented. The inclusion of the many foreign articles is especially valuable to those who do not have access to large medical libraries or find difficulty in obtaining translations.

The scope of the work necessarily limits the space devoted to any one article, but the reader will find each review sufficiently comprehensive to familiarize him with the subject under consideration, and the more thorough investigator will be enabled to decide whether the original need be consulted.

The volume is published yearly and includes reviews of the literature for one year up to the previous July.

WILLIS S. KNIGHTON, M.D.

Briefer Comment

ANNUAL REPORT OF THE DEPARTMENT OF HEALTH, CITY OF BALTIMORE. Baltimore: 1931. 300 p.

Concomitant with the complexity of modern urban life is the need for a widespread and effective control of health, not only as an individual problem, but as a social and community project. Exemplifying the wide scope of the modern health project is this report of the work being done in the city of Baltimore for the control of communicable diseases, diagnosis and care of the tuberculous, child welfare (which includes maternal and infant care), school hygiene and public health nursing, to mention only the major headings of the program. The fact that the eyes and their conservation are mentioned as part of each program indicates the broadness of the prevention of blindness problem.

SIXTH ANNUAL REPORT OF THE GIZA MEMORIAL OPHTHALMIC LABORATORY, DEPARTMENT OF PUBLIC HEALTH, MINISTRY OF THE INTERIOR, EGYPT. Cairo: Schindler's Press, 1932. 126 p.

As interesting to the layman as to the ophthalmologist and the scientist is the report of the Giza Memorial Ophthalmic Laboratory. The work in controlling trachoma and purulent conjunctivitis, which are so prevalent in Egypt, is explained; research into the cause of trachoma continues to hold the attention of the medical and scientific world. Three projects of interest were undertaken during the past year. A study was made, empirically, of the relation of nutrition to the incidence of trachoma; among Egyptians, very little influence could be demonstrated. In the attempt to prevent the development of trachoma among children, the entire population of one village were given supplies of prophylactic drops which, it was hoped, might prevent the development of the disease; unfortunately, the ignorance and indifference of the people caused this effort to be abandoned until education has aroused a greater sense of responsibility. The third project was the visit of the director to the United States to study trachoma in the American Indian; the report stated that there were marked dissimilarities between the trachoma found in Egypt and that found in the United States.

LIGHT THEN AND NOW. Ida Belle Lacey. New York: The Macmillan Company, 1930. 209 p. Ill.

The story of artificial illumination, from the days of the cave dwellers through the ages, to our animated electric signs, our street lighting and our interior lighting. The text is well suited to the younger elementary school child, interestingly told and factually accurate. The large type and the simple and clear illustrations, both by photograph and by sketch, would give it a place in the school library.

SAFETY EDUCATION. Florence C. Fox. Bulletin No. 8, United States Office of Education. Washington: United States Government Printing Office, 1932. 73 p.

We can make the world a safer place for children by building playgrounds and play streets, providing supervision of play and inspiring safe games; yet, without the full and wholehearted co-operation of the children themselves, none of these artificial safeguards has a permanent value. This full study of the methods of making safety a well-learned lesson in childhood is a valuable contribution to the problem of protection, both present and future. The child who has learned the valuable lesson of caution and control will not lose his sense of responsibility as an adult.

THIRTY-FIRST BIENNIAL CONVENTION, AMERICAN ASSOCIATION OF INSTRUCTORS OF THE BLIND. New York: New York Institute for the Education of the Blind, 1932. 815 p.

Although many of the papers at this five-day conference were concerned with the progress of education for the blind, the eminent personalities in the history of the education of the blind, and the tools of education for the blind, its president, sounding the keynote of the new outlook for the blind, said: "The first right of a blind person is not to be blind." The progress in ideas for education of the blind is made startlingly apparent in its history, with the shift from the ideas of protection and asylum to present-day methods of training sightless persons to take their place in the everyday world without fear or undue handicap.

EIGHTEENTH ANNUAL REPORT FOR THE OPHTHALMIC SECTION, 1930, DEPARTMENT OF PUBLIC HEALTH, MINISTRY OF THE INTERIOR, EGYPT. Cairo: Government Press, 1931. 40 p.

The number of ophthalmic units under the supervision of the Egyptian government is now 46, of which 14 are traveling and 32 stationary, and the increase in the number of patients and the treatment is proportionately greater for the year 1930. Among the interesting figures concerning eye disease and defect found in the Egyptian eye clinics, and the causes of blindness, as compiled in the clinic records, is the fact that of 11,717 school pupils whose eyes were examined 92 per cent were found to be suffering from trachoma. Although 25 per cent of these were in the serious stages of the disease, after treatment was instigated the percentage fell to eight. This work not only cures those suffering from trachoma but, through the destruction of the active follicles, helps to prevent its spread.

STATE REQUIREMENTS FOR INDUSTRIAL LIGHTING; A HANDBOOK FOR THE PROTECTION OF WOMEN WORKERS, SHOWING LIGHTING STANDARDS AND PRACTICES. Marie Correll. Bulletin No. 94, Women's Bureau, United States Department of Labor. Washington: United States Government Printing Office, 1932. 65 p.

Although it is conceded, theoretically, that studied lighting reduces accidents, wards off eyestrain, and improves efficiency, the adoption of adequate lighting plans in industrial places has not been widespread. In this analysis of the code for lighting factories, mills and other work places, the issues and the benefits to employer and employee are concisely stated. A detailed study of state standards and practices demonstrates the general inadequacy of state lighting laws, most particularly in those states not considered manufacturing. The adoption of adequate state lighting codes, their enforcement, and the co-operation of employers would definitely bring closer the goal of vision conservation and optimum health standards.

HOW THE TEACHER MAY HELP THE EXCEPTIONAL CHILD. Charles Scott Berry. Ohio State University, 1932. 23 p.

This pamphlet of suggestions to the teacher who has in her class of "normals" an exceptional child is particularly dedicated to those

teachers in whose school community there are no special classes. Pointing out the mental hygiene aspect of the teacher's special knowledge of handicaps and exceptions, and the economic value of educating exceptional children so that they may compensate for their handicaps, the writer makes practical suggestions as to methods of procedure with children of all types. A thoughtful bibliography concludes each chapter.

PARENTS' PROBLEMS WITH EXCEPTIONAL CHILDREN. Elise H. Martens. Bulletin No. 14, United States Office of Education. Washington: United States Government Printing Office, 1932. 72 p.

Out of the White House Conference on Child Health and Protection, and particularly from the meetings of the section on exceptional children, has come this sound and practical handbook for parents on educational and guidance practices for the out-of-the-ordinary child. Including in its scope all unusual children—the physically handicapped, the bright, the dull, the antisocial—this contribution should prove of help and comfort to bewildered parents in its sanity and its practical grasp of realities.

AN EXPERIMENTAL STUDY OF THE EDUCATIONAL INFLUENCES OF THE TYPEWRITER IN THE ELEMENTARY SCHOOL CLASSROOM. Ben D. Wood and Frank N. Freeman. New York: The Macmillan Company, 1932. 214 p. Ill.

Since children of today are born into a machine-run world, it seems sound theoretically that they should utilize machines as educational aids. That this theory may work out successfully in practice is the argument of this book. Two years of experiment, in 27 schools, among 6,125 pupils, showed that the typewriter, introduced as an implement in the educational environment, has a permanent place. The typewriter has been demonstrated to be not only an aid to writing, but a stimulant to written expression and an aid to reading, since the young reader is not confronted with two typographical systems; and it increases interest and output in all types of assignments in the school curriculum.

Contributors to This Issue

Dr. Shirley W. Wynne, commissioner of health of the City of New York, is nationally known for his accomplishments in the field of municipal health.

For the past two years, **Miss Mary Emma Smith, R.N.,** director of nursing activities of the National Society, has been giving demonstrations throughout the country of methods of testing the vision of little children. **Miss C. Edith Kerby,** who collaborated in the survey, is statistician for the Society.

Dr. J. Guy Jones, who is instructor in clinical ophthalmology and oto-laryngology at Baylor University and a practicing eye, ear, nose and throat physician in Dallas, Texas, is known in scientific and industrial circles for his interest in industrial ophthalmology.

Dean of ophthalmology in France, **Professor F. de Lapersonne** serves as president of the International Association for Prevention of Blindness and of the French national committee.

Miss Mary E. Stebbins, as supervisor of the Department for Prevention of Blindness of the Missouri Commission for the Blind, appreciates the importance of good light for vision testing.

As chief of the eye service of the Presbyterian Hospital in New York City, **Dr. John M. Wheeler** has observed the value of medical social service in eye work. Dr. Wheeler is professor of ophthalmology at the College of Physicians and Surgeons, Columbia University.

Among the book reviewers: **Dr. Ellice M. Alger** is professor of ophthalmology at the New York Post Graduate Medical School;

Miss Erma Grill is a sight-saving class teacher in Saginaw, Michigan; **Miss Matie M. Carter** is supervisor of sight-saving classes, State Education Department, New York; **Dr. Willis S. Knighton** is a practicing oculist in New York City and on the staff of the New York Eye and Ear Infirmary.

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